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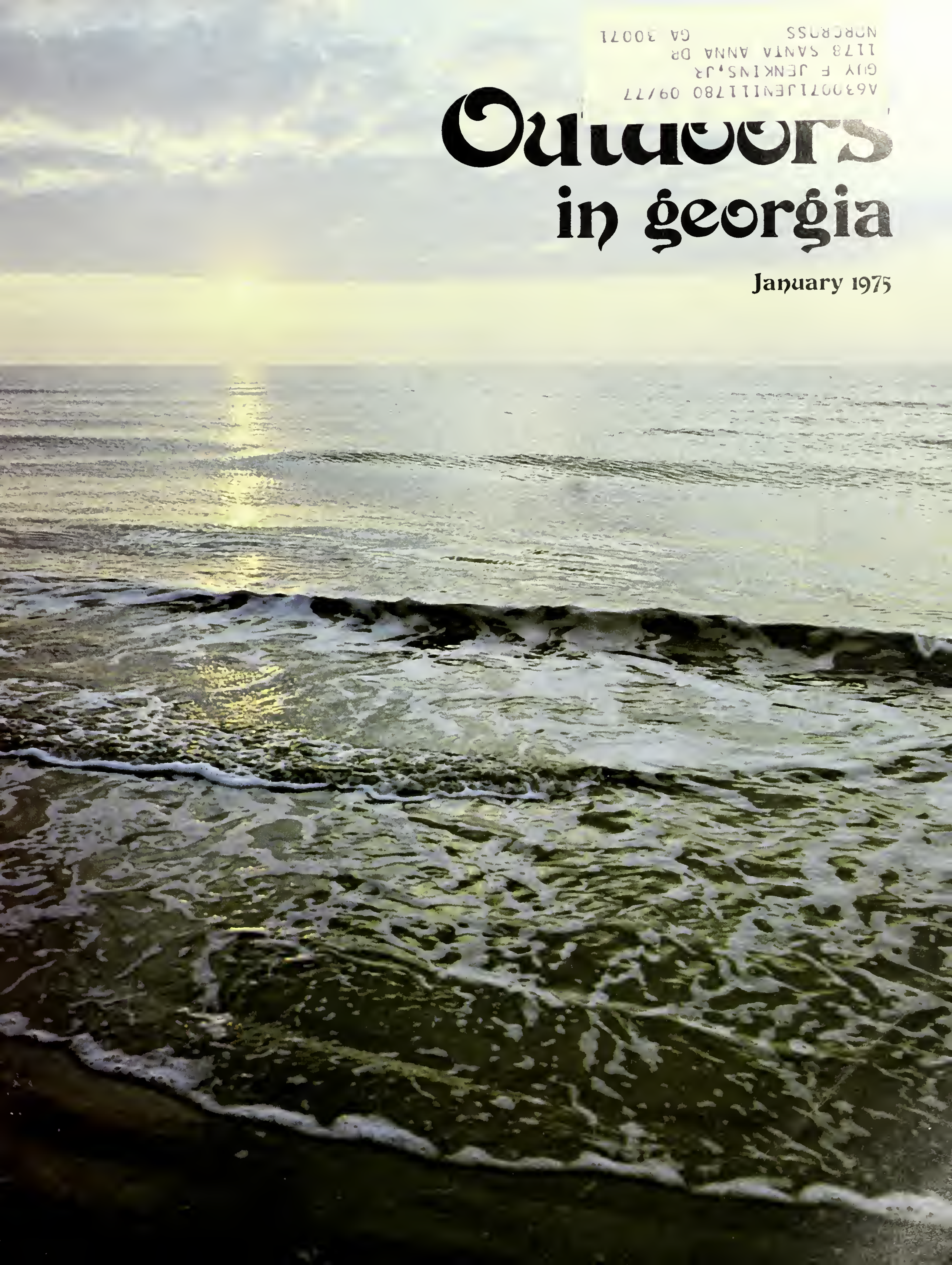
Outdoors in georgia

January 1975



Outdoors in georgia

January, 1975 Volume IV Number 1

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ON THE BACK COVER: A quiet lane on the outskirts of the new Skidaway State Park. Photo by T. Craig Martin.

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The Board

Just as this issue of the magazine was going to press, Governor-elect George Busbee announced that he had asked Joe D. Tanner to continue to serve as Commissioner of the Department of Natural Resources. I commend the Governor-elect.

I do so because Joe Tanner is an able and highly qualified man for this job, but more so, because the Governor-elect has kept the Department out of politics. There could have been substantial pressure from some who had assisted in his campaign to replace Joe Tanner. The fact that he did not yield to this pressure demonstrates that Mr. Busbee intends to use governing Boards of Directors—in this case, the Board of Natural Resources—as they were intended to be used.

After Mr. Busbee won the general election, this Board unanimously recommended to him that Joe Tanner be retained as Commissioner. The Governor responded to that recommendation affirmatively and by so doing showed his faith not only in the Commissioner and Department, but in the Board as well.

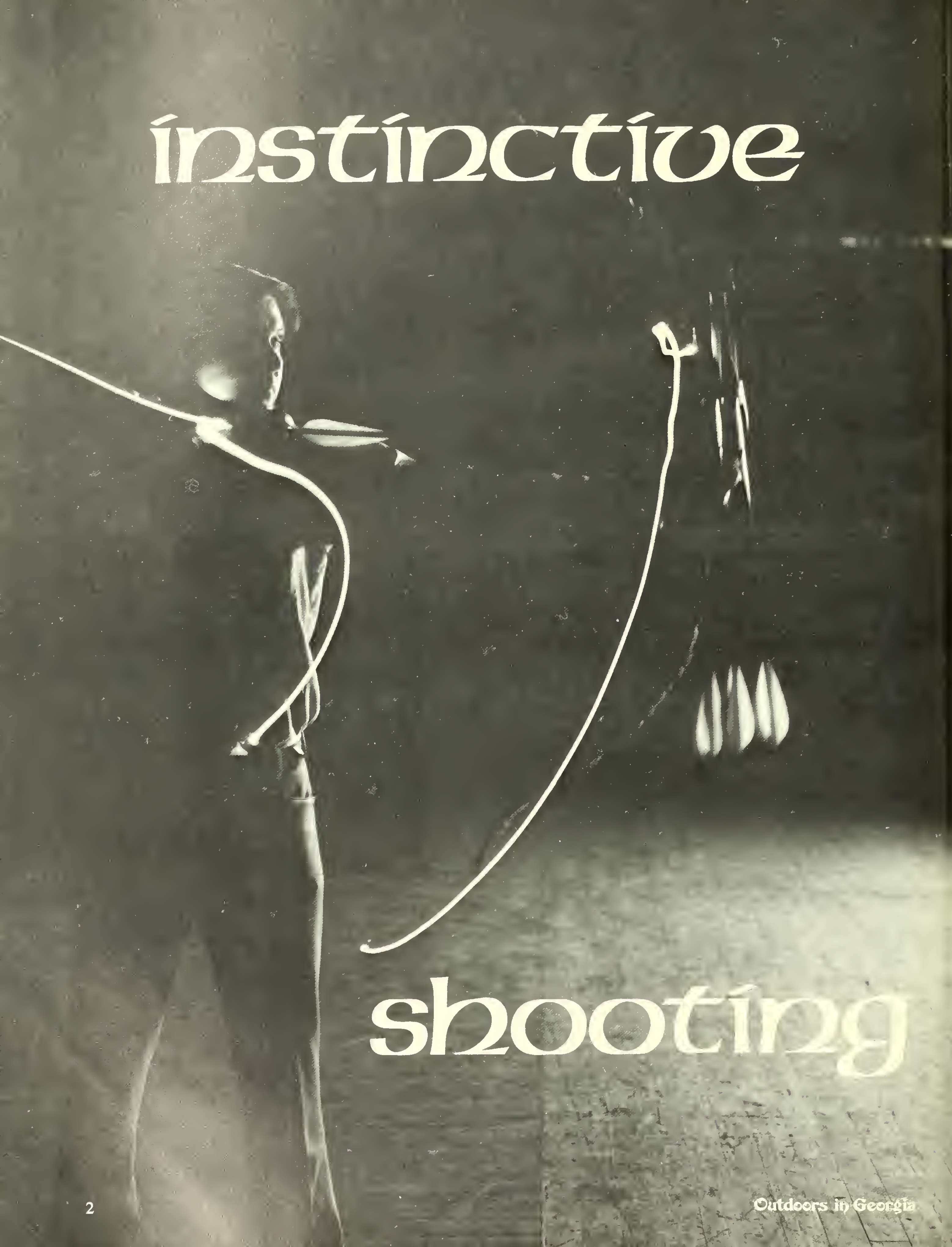
Our immediate and future needs in this state are critical. It is incumbent upon us to strike a reasoned balance between economic development and environmental protection.

The Board of Natural Resources and the Department it governs shares the view of Governor-elect George Busbee that we can attract new industry, and consequently, new jobs to Georgia in a manner which is compatible with responsible environmental protection.

George P. Dillard

Chairman, Board of Natural Resources

instinctive shooting



by Gibson Johnston, Jr.
and Floyd Anderson, Jr.
Photos by Bob Busby and Jim Couch

Instinctive shooting in the woods is more reliable than dependence on bow sights. The sight must be used with very accurate judgment of distance, and the best judgment a hunter can muster at sunrise or dusk is poor.

To shoot instinctively: use correct basic form, draw the arrow smoothly toward your normal anchor point, with your eyes open and fixed on the smallest discernible detail of the target area, and without stopping the draw *at all*, release your hand back to the shoulder. Do not stop at the face anchor point to "aim" or calculate elevation. In a few practice sessions your aim will become instinctively good.

Practice should begin with good personal instruction from an experienced bow hunter or tournament archer. It would be good to spend some time in the off season going to archery tournaments and becoming educated in the basic form required of an archer. Then, apply what you learned to bow hunting.

Now, let's take a look a basic form. The bow hand grip should be *light*. Anchor should be at a point which is consistently reached, comfortable, and distinctly identifiable. There are two basic anchor positions that have good foundational logic to support their use.

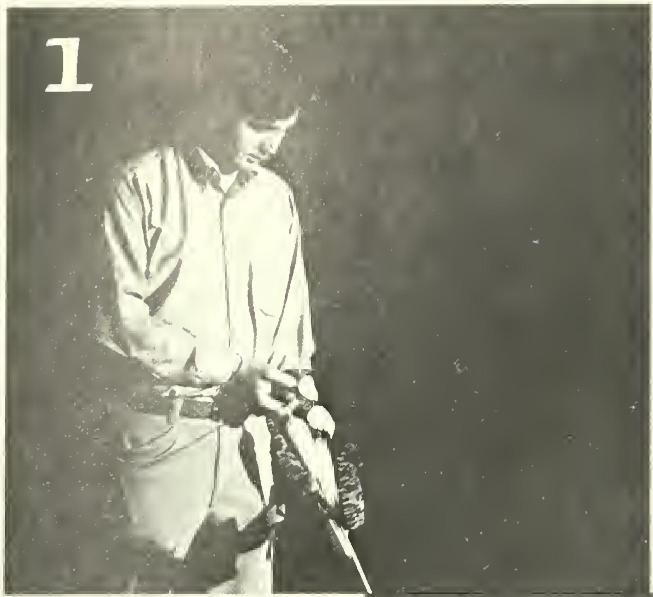
The "side of face" anchor position should be used only if a firm and easily identifiable point of anchor can be found. The advantage of this anchor is that for short distance shots the arrow is closer to the line of sight and there is less chance of overshooting the target area.

The main disadvantage is that for longer shots a lower anchor is needed. A second and vitally important disadvantage is that in quick shooting an archer develops a "floating anchor" which is inconsistent since the side of face anchor is an awkward drawing target. "Floating anchor" actually means "*no*" anchor. A third disadvantage is that the string is drawn to the side of the face, out of line with the eye, forcing head rotation to line up the eye, arrow and target.

The other basic position used by almost all tournament archers, but rarely seen in bow hunters, is the "under the chin" anchor point. It is a natural and near perfect anchor position. There is only one disadvantage to this anchor point: "over shoot" at close range is more likely. With

This time exposure indicates the smooth motion essential in "instinctive" shooting. The streaks are caused by small flashlights on the bow and the shooter's wrist. The slight squiggle in the bow occurred after release.

The following sequence of 10 photos (selected from a set taken with a motor-driven camera), breaks down the essential movements in instinctive shooting from the "chin anchor" point.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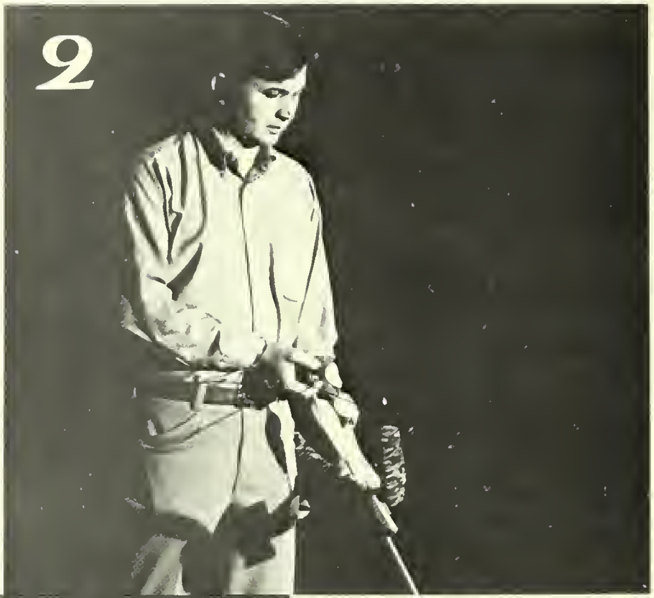
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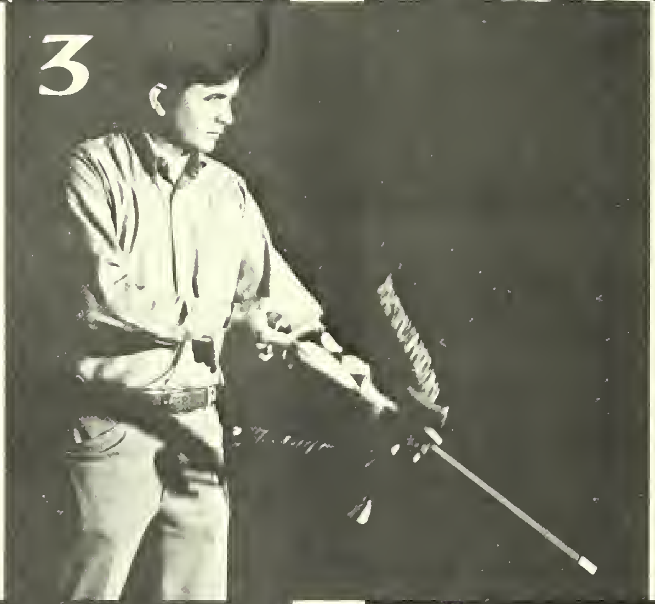
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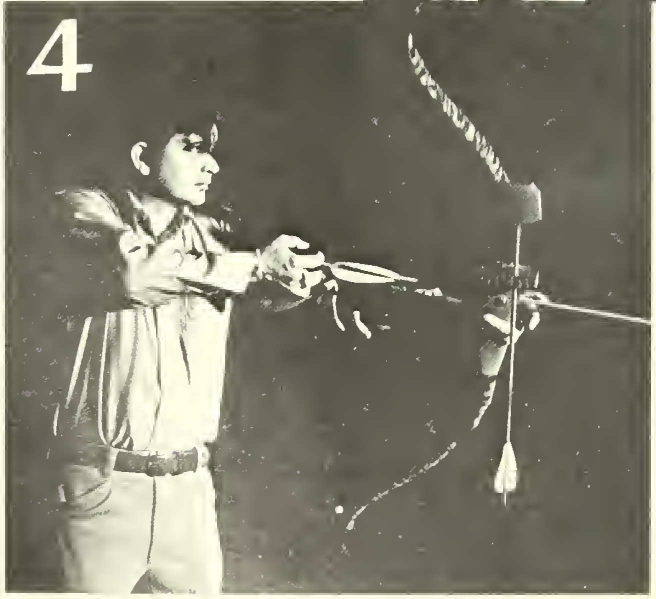
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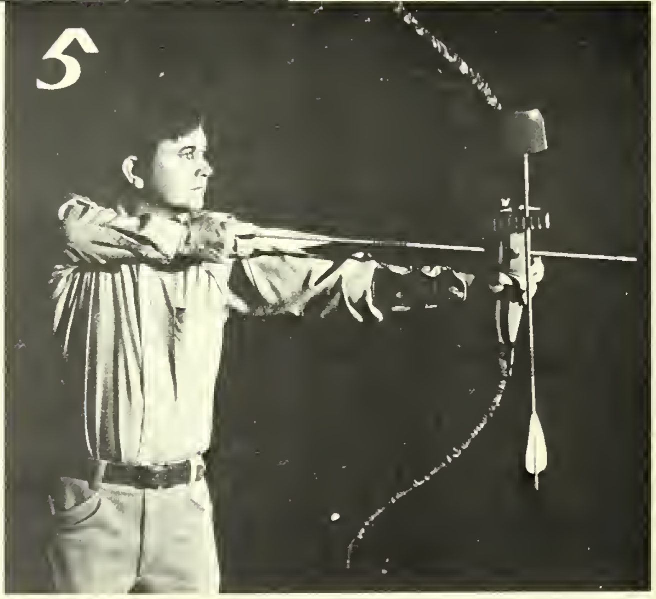
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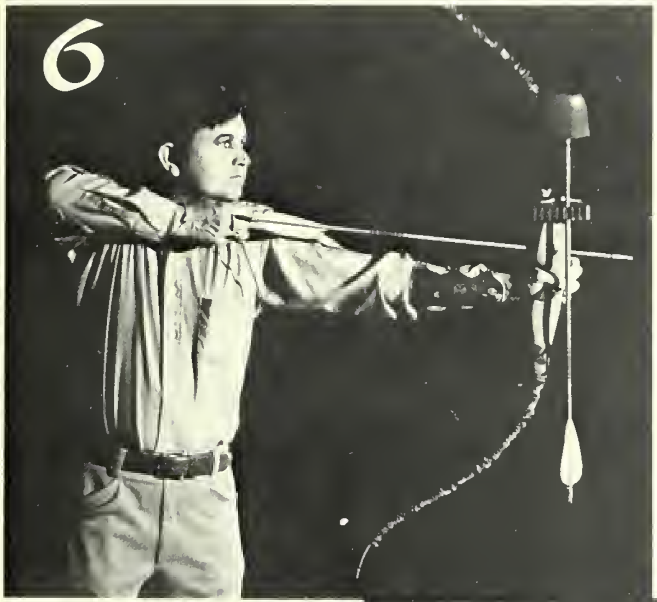

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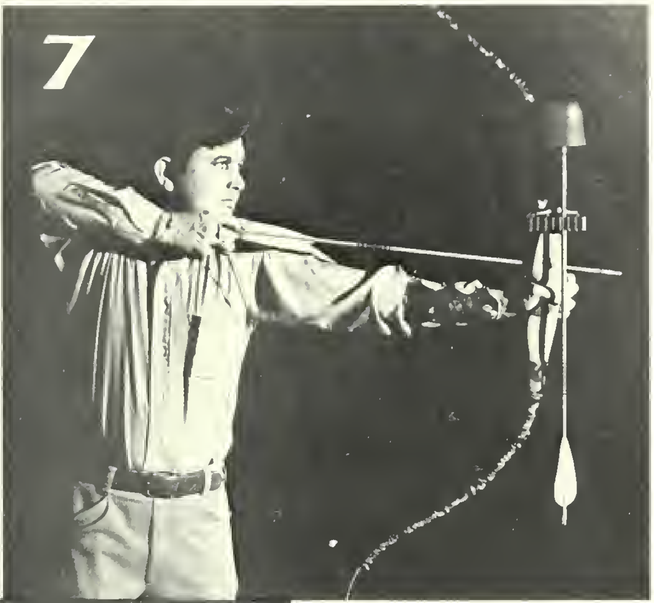

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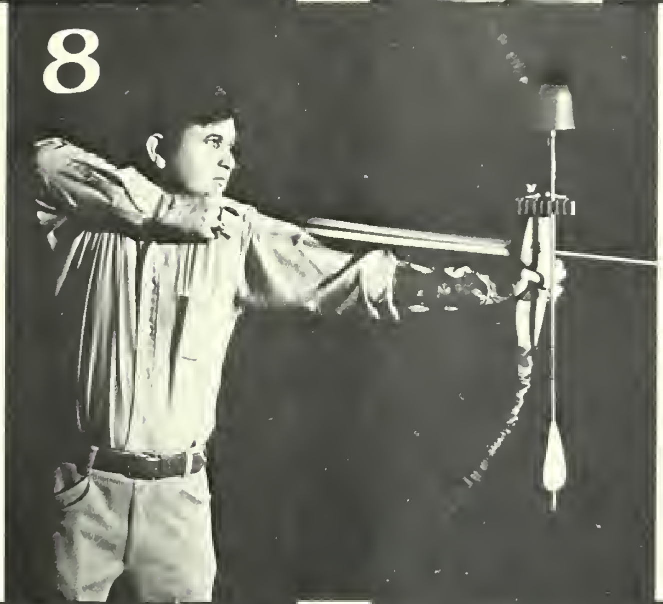

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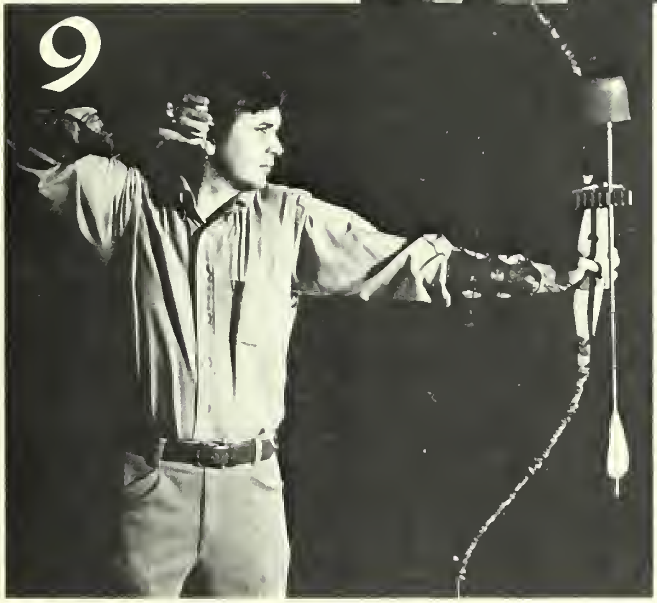

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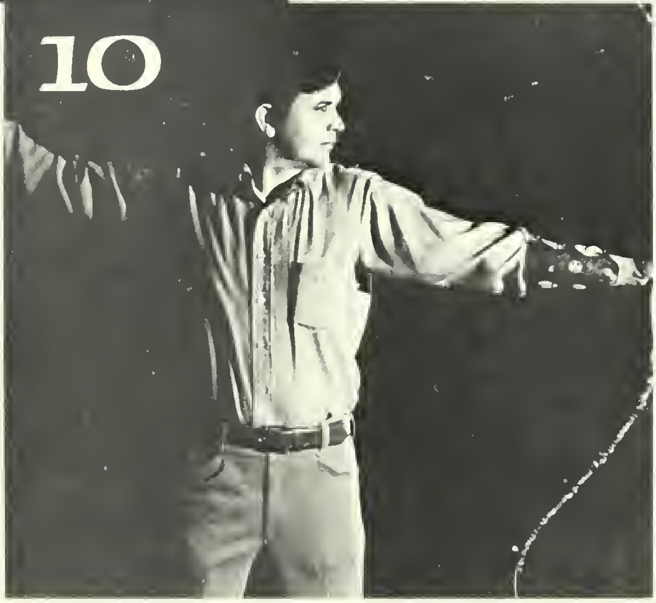


some practice at lowering the bow arm in relation to the target at close range, this disadvantage can be corrected.

Once a firm anchor point has been selected, a smooth draw motion should be developed. It should be fairly rapid and should not be stopped until release.

Follow through with the bow hand as well as the release hand is very important. The bow hand should remain set until the arrow strikes the target. The release hand should continue the drawing motion after the release, straight back to the shoulder position.

Your eyes should be focused intently on the smallest discernible point in the target area. They should never be moved off the target while drawing or releasing.

Instinctive shooting as described here is more dependable, at unsure distance, than sights.

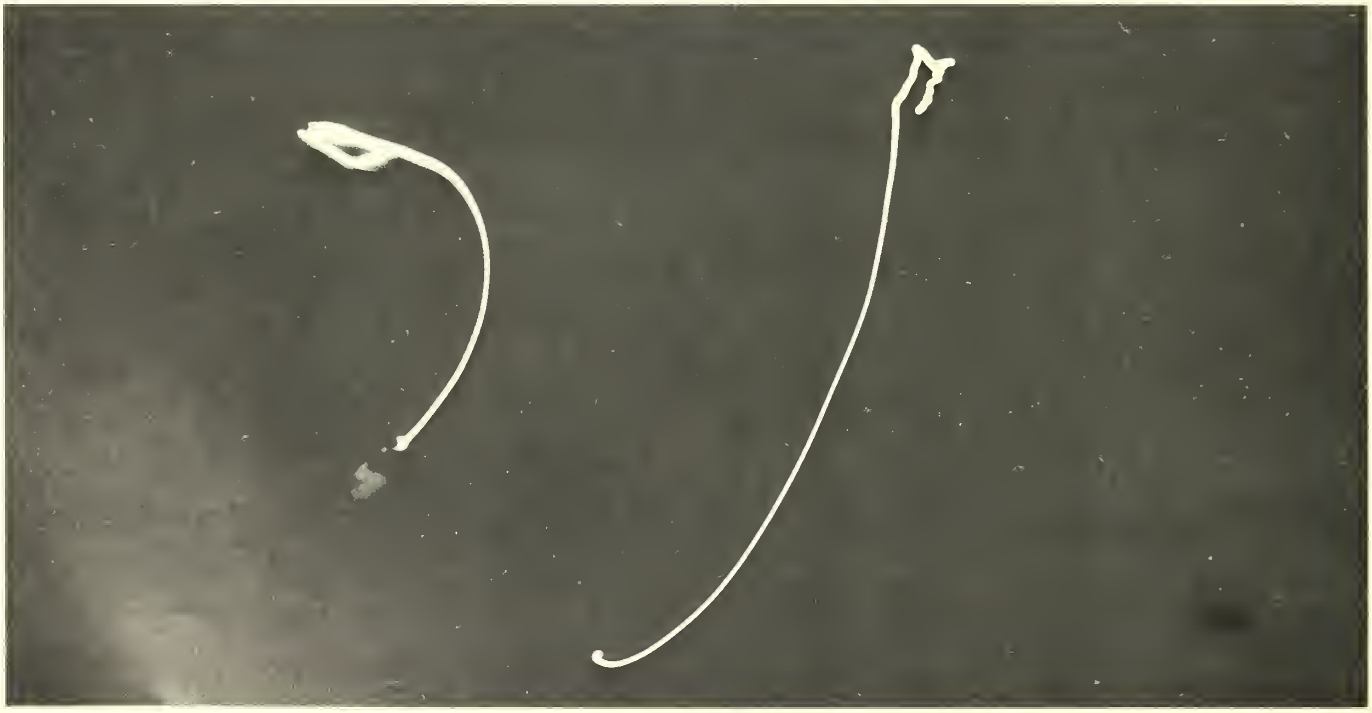
Finally, well before hunting season, begin to practice at least twice a week for 30 minutes a session. Practice started a week before the opening day will only produce sore muscles and poor performance. Year 'round shooting is best and your bow will become as familiar as your favorite boots.

Don't stand in one spot to practice. Don't even shoot two arrows from the same spot or the same position. You'll only get one shot in the woods, and with this type of practice you'll be ready for that deer even if it presents less than the classic shot.

Don't leave your bow at home when scouting hunting areas. Take it with you, but with field points instead of hunting heads—lest someone think you're anxious to begin the season early. As you walk along pick a random target, such as a leaf, and draw and shoot in the style described earlier. This will present the same conditions that you likely will face while hunting later on. Never shoot more than one arrow at a target, since you must make the first arrow count when hunting.

You still may not get that trophy, but with work as described, the odds are more on your side.

Another time exposure indicates a more deliberate aiming style. The streak on the left is the arrow hand, that on the right is the bow. The left (arrow hand) streak also shows a "dead" release with no follow through.



wildlife management areas:

RAYONIER

by Dean Wohlgemuth

Lofty cypress trees, reaching upward into blue South Georgia skies, seem to stand as sentinels over small natural ponds flecked with snowy water lilies. A setting giving the full flavor of a natural environment. This is what you can expect to find at one of the newest of the Game and Fish Division's wildlife management areas.

The Rayonier Wildlife Management Area is located in Wayne and Brantley Counties, within an hour of Georgia's coast.

Owned by ITT Rayonier, Inc., the area was leased to the Game and Fish Division in 1972, and incorporated into the wildlife management area system. The management area is part of Rayonier's Satilla Forest. Rayonier is one of the several forest products firms that cooperates with the Department of Natural Resources by allowing managed public hunting on its lands.

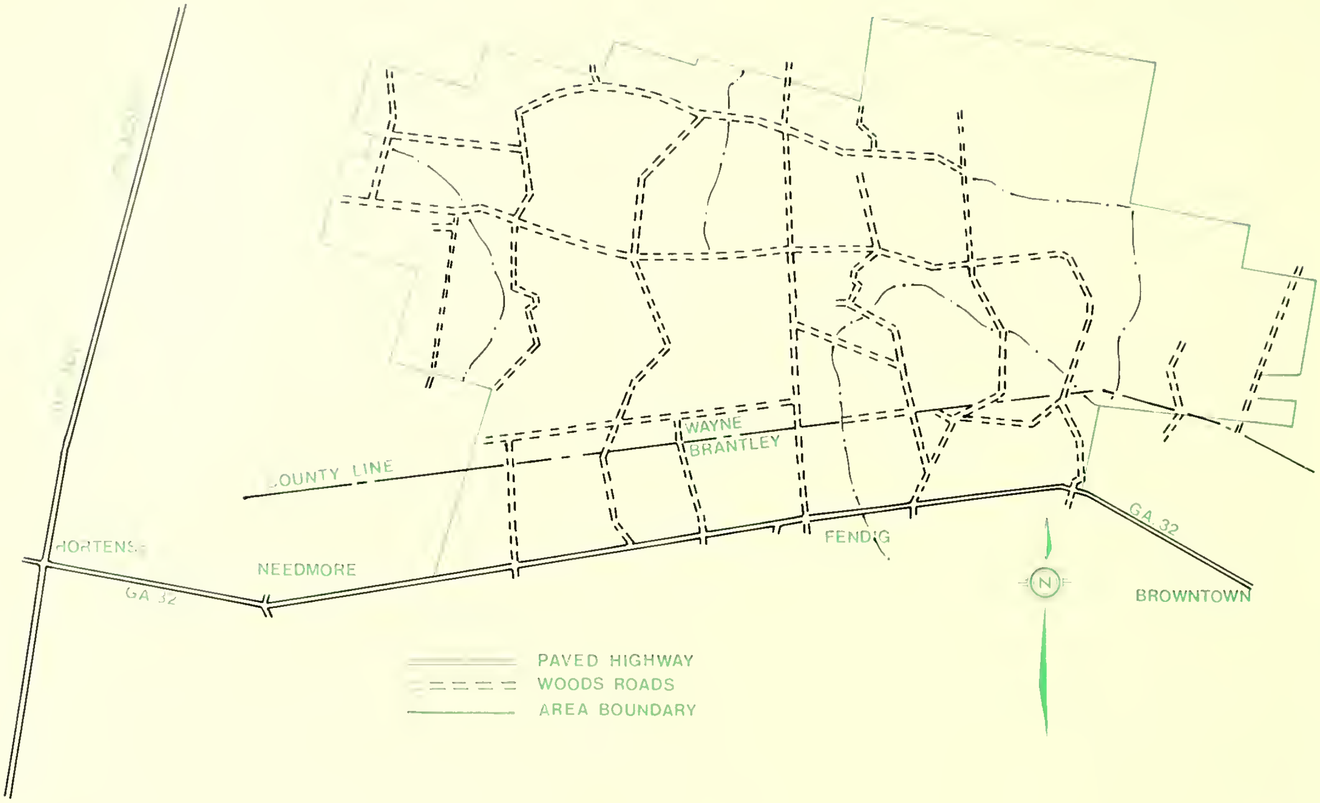
Even though Rayonier WMA is a working forest, the habitat is not limited strictly to pines. Although this region of the state is predominately pine naturally, many swampy little ponds dot the landscape: these harbor, not only the cypress mentioned earlier, but many different types of hardwoods, including water oak, red maple, sweetgum, black gum, red bay, white bay, and magnolia.

The amount of land in hardwoods is considerable, since the Rayonier limits its harvest in the swampy lowlands. These areas account for about 30 percent of the overall total of 19,000 acres in the management area. The swamps are not drained, and are left in the natural state.

Cypress trees are both pond and an occasional bald cypress. The pond cypress probably average about 100 years of age, while the bald cypress may run to 200 to 300 years old. Some old, dead cypress are left in a decaying state to provide den trees for wildlife.

Throughout the pine plantations (composed of longleaf and slash pines) the understory is palmetto and gallberry. This is the common ground cover for the coastal plains region. An occasional ridge of turkey oak and post oak occurs in the uplands—but here, the uplands are hardly up.

Once Rayonier superintendent William F. Miller mentioned site preparation on the "hills" to a group of visitors. Realizing there was no hill visible to the guests, Miller pointed out that one foot of elevation may determine whether or not the land is covered with standing water much of the year. "If it isn't under water most of the



year, we call it a 'hill' in this part of the country," he grinned.

The management area is interlaced with good logging roads, roughly dividing the area into 1,000-acre management blocks. Blocks are shaped according to the natural terrain, such as creeks, swamps, and ponds.

Penholloway Creek springs to life in this forest, and flows northeasterly to the mighty Altamaha River. The headwaters of this creek are mostly swampy canebreak, providing one of the more scenic portions of the area, and a mecca for wildlife.

Here, you may see a blue heron, snowy egret, a bittern, barred owl and any of several hawk species. You might even be fortunate enough on rare occasion to spy a swallowtail kite or pileated woodpecker.

Perhaps you might see an alligator or two. Some gators were present on the area, but these have been supplemented by stocking. This is part of an alligator relocation program.

The major stocking effort is, of course, deer. There were a few deer already on the management area, but the whitetail population was pretty low. This was due largely to heavy hunting pressure and poaching.

Approximately 30 deer have been released on the area in the past two years. Thanks to this effort, coupled with law enforcement and management, the deer are becoming abundant.

"We can't project when the area will be opened for deer hunting," said Skippy Reeves, Game and Fish wildlife biologist. "Rayonier WMA, like all of our areas, is included in the Pittman-Robertson (PR) federal aid program. Regulations of the PR program require us to close an area for at least five years after the initial stocking of deer."

"We are now in the process of evaluating the deer herd," Reeves said, "and the deer are responding exceptionally well to management and protection."

"One of the reasons for this," Reeves said, "is the broad controlled burning program employed by Rayonier. Burning isn't simply important to game management in the flatwoods; game management without controlled burning would be impossible."

The Rayonier WMA also has some potential as a turkey area. A few turkeys are seen on the area occasionally, and some broods of young poults have been sighted this year.

Small game hunting is all that is now legal on the Rayonier area. The area has good potential for several species and generous seasons.

An expanded small game hunt has been scheduled for this season, Reeves said. Small game hunting will be allowed for those species currently in season in this portion of the state, from December 1 through January 25, and from February 10 to 28. No check-in or check-out is needed, and no permit or fee is required.

Small food plants serve both to break up the great stands of timber and to provide especially attractive food sources for wildlife.

Photo by Deon Wohlgemuth

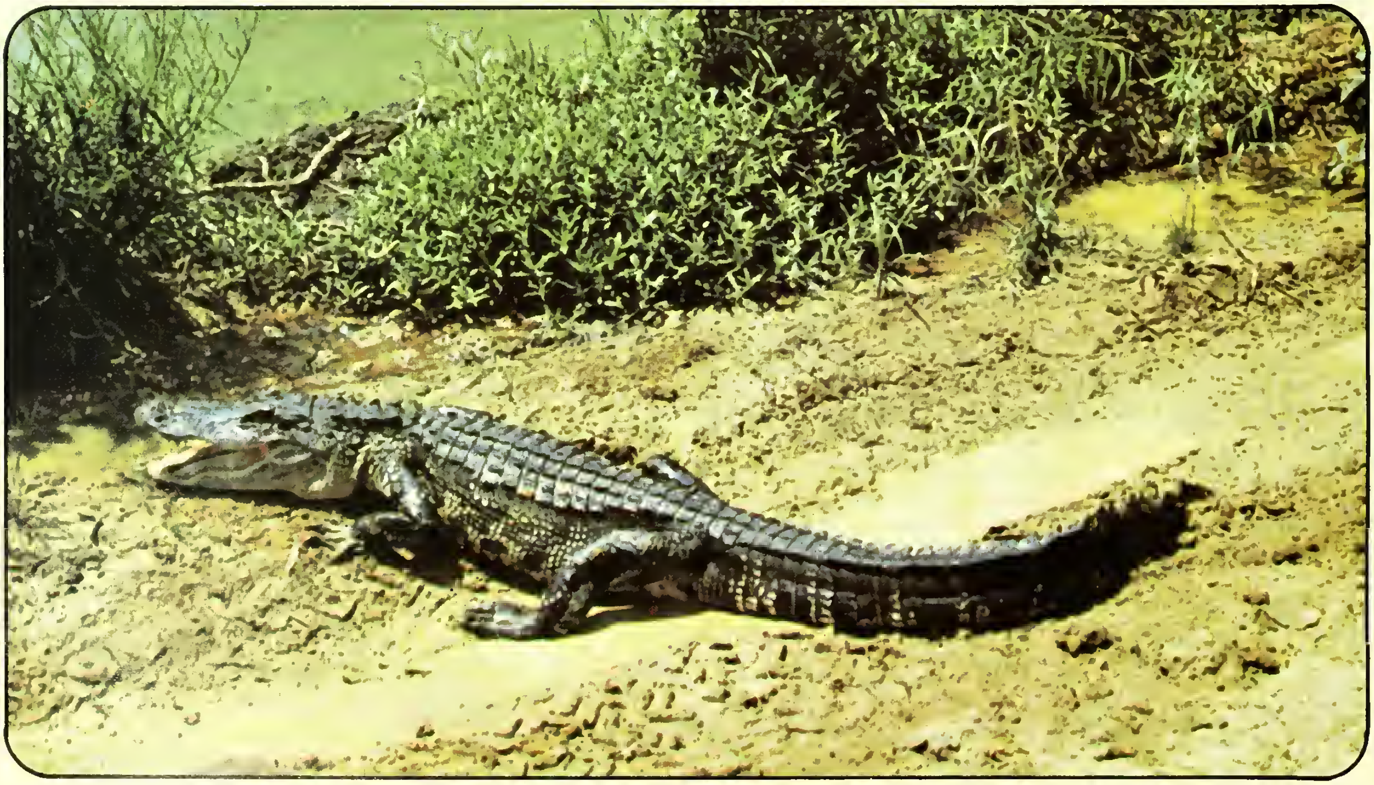
Only one gate will be open for access, that one near the Rayonier Satilla Forest headquarters. To reach this gate, go south of Jesup on U.S. 301 for 19 miles to Hortense. At the yellow flashing caution light, turn left on Ga. Highway 32, and travel east about seven miles. If you are coming from Brunswick, go north on U.S. 341, five miles past the I-95 interchange, to the junction with Ga. 99. Go left on 99 about four miles, then turn right on Ga. 32. Continue for about 14 miles to the gate. Jimmy Neal is the area manager.

Dove hunting is usually good on clearcut areas. Quail hunting is fair to good in the same areas. Squirrels are not overly plentiful, but there are some fox squirrels.

The average size of harvested sections of the forest is about 400 acres and the shape is regulated by the natural terrain. Each harvested area is dotted with many ponds and swamps that are left to nature, making additional edge and hardwood habitat areas in the openings.

Natural foods found among the young trees and open areas, which are good for small game

Although the area is not yet open for deer hunting, deer have been stocked and one day will provide fine sport.



A few alligators lived here, and more have been stocked during a relocation program.

Photo by Bob Sires

The author, an ITT-Rayonier employee, often ventures onto the management area in search of small game.

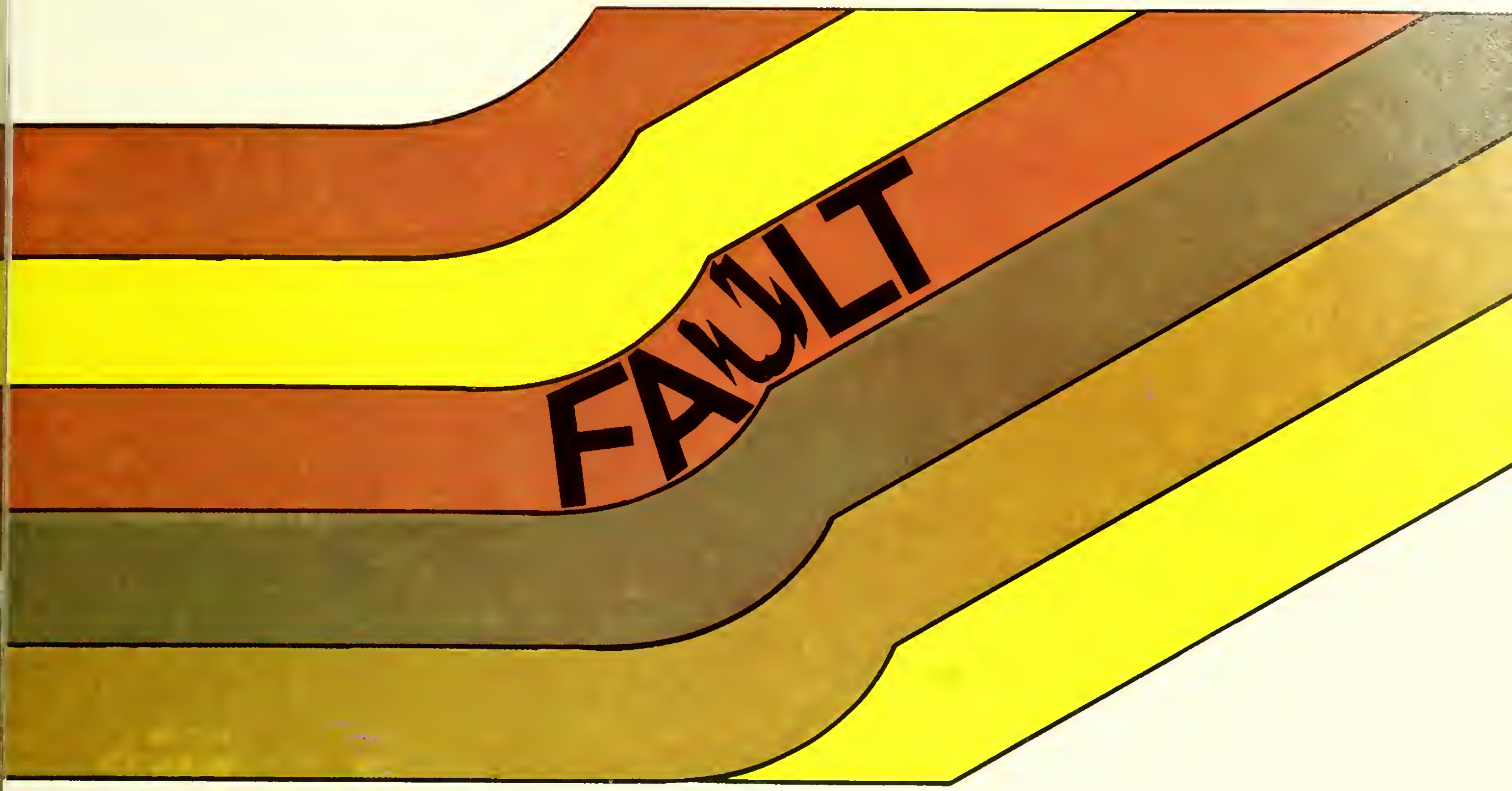
and deer alike, include such things as lespedeza, ragweed, beggarweed, black gum berries and various grass seeds. In the several game food plots planted by Game and Fish, you will find corn, rye, oats, and chufas.

The harvested areas provide good small game hunting for a period of about six years, until young seedlings get too tall for good shooting. At age 15 years, the plantations are thinned, and control burned on a schedule of at least once every five years. This leaves the woods more open and allows lush, tender undergrowth to sprout, providing good wildlife food.

Thus, out of the 30-year growing cycle of the working forest, only about eight years are left when the growth may be too thick to provide good hunting. During this period, however, the thick cover provides escape cover for all wildlife needs.

A few wood duck boxes have been erected in the swampy areas, and chances are pretty good that you'll see some woodies. Mallards and other dabbling ducks are sometimes seen around the swamps, but the area is not a prime waterfowl hunting spot. Although it is not a fishing area either, some ponds, creeks and roadside ditches can be fished during the hunts. You might catch several species of bream, particularly warmouth and stumpknockers, and perhaps a chain pickerel (jackfish) or a redfin pike (also a pickerel).

At any rate, the Rayonier Wildlife Management Area is a forest abounding in natural beauty, both in flora and fauna, with an infinite variety of trees and undergrowth as well as all sorts of wildlife for gun, camera, or binocular enthusiast.



FAULT

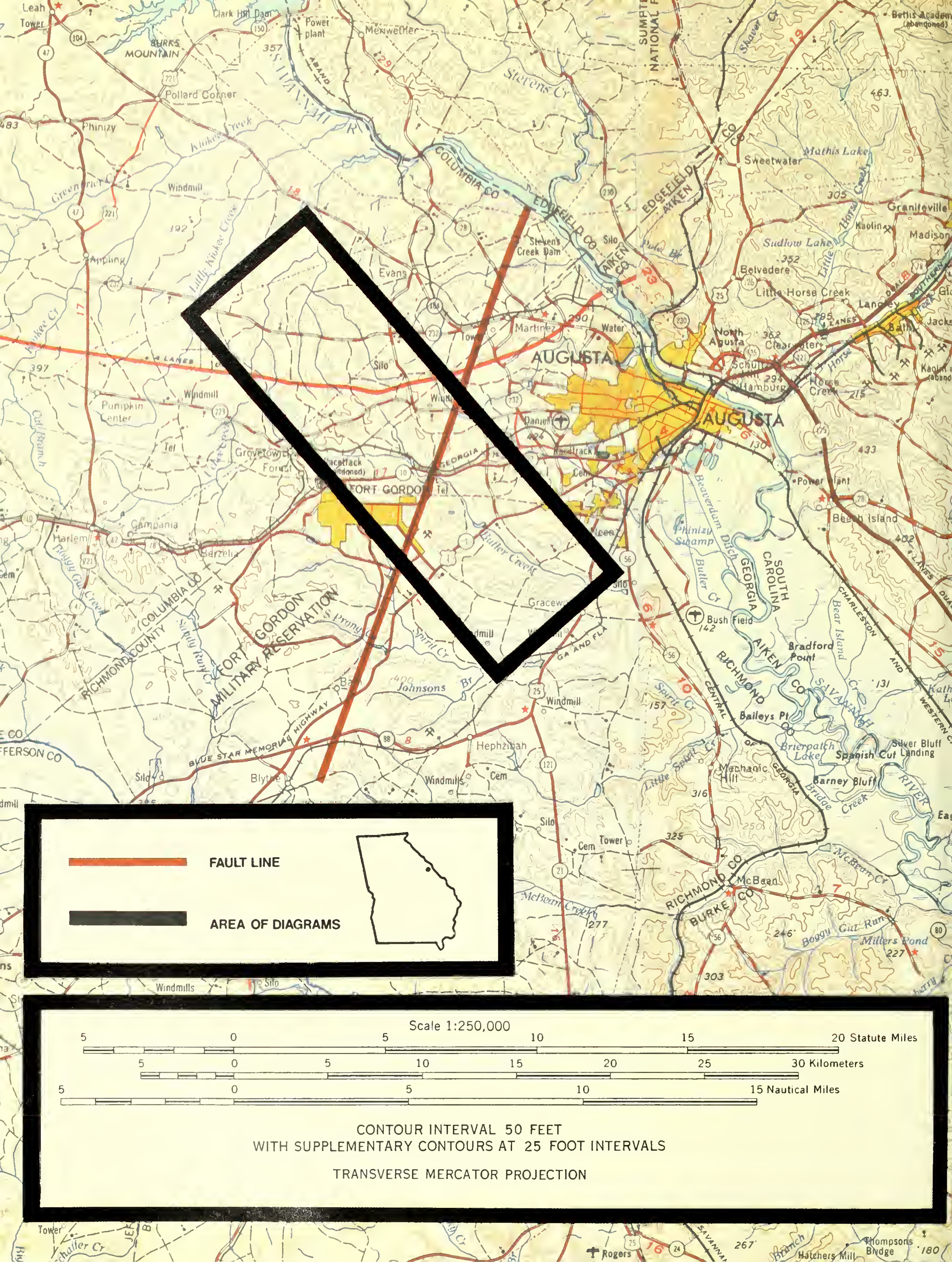
This view to the northeast across the fault is a good example of what a geologist looks for in the field. The light material with the gray streaks sloping off to the left is a soft gravelly sandstone with parallel gravel layers (the gray streaks). The gravel layers end abruptly on the right and the color of the material changes from light (almost white) to a brown. This boundary between the two colors is the fault. The darker material on the right is deeply weathered and decomposed phyllite. The fault was formed when the phyllite was pushed obliquely from right to left up onto the gravelly standstone. The gravel layers in the sandstone usually are almost flat in the Augusta area, but here they have been tilted up by the rising mass of rock on the right.

Photo by Dr. Bruce O'Connor

by Dr. Bruce J. O'Connor
Graphics by Jose Vinas

Of all the words in geological jargon, the term "fault" probably is the best known to the general public. Geologically, a fault is a crack or a break along which masses of rock have slipped past one another under the earth's surface. As structurally active points, faults are associated with earthquakes and earth tremors, and it is in this context that the layman thinks about them.

So it may be disquieting to learn that a relatively "young" fault recently was discovered in the Augusta-Fort Gordon area. Named for Belair, a crossroads a few miles west of Augusta, the fault was exposed by a surface mining operation. Its earthquake potential


FAULT LINE
AREA OF DIAGRAMS
Scale 1:250,000
5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles
CONTOUR INTERVAL 50 FEET
WITH SUPPLEMENTARY CONTOURS AT 25 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION
AUGUSTA
NORTH AUGUSTA
FORT GORDON MILITARY RESERVATION
GEORGIA
SOUTH CAROLINA
SAVANNAH RIVER
RICHMOND CO
COLUMBIA CO
AIKEN CO
EDGEFIELD CO
BURKE CO
Martinez
Evans
Grovetown
Hephzibah
Blythe
Harlem
Appling
Graniteville
Belvedere
Bush Field

probably is not high, but caution dictates that construction in the area take the possibility of earth tremors into account. Aside from the earthquake aspect, this fault and its configuration are very interesting and will greatly illuminate the geologic history of the Augusta area.

The Belair fault is exposed at the clay pits of the Georgia Vitrified Brick Company in western Richmond County on the south side of U.S. Highway 78 and 278, just west of the Fort Gordon entrance. It was discovered in 1973 by the Earth and Water Division during the field studies portion of the Division's state geologic map project.

The fault and its geological context at Belair are important for several reasons. In particular, the outcrops at Belair provide new scientific information, since we did not know that faults of this relatively young age occurred in metamorphic rocks this far south in the United States. Now we have a more complete understanding of the sequence of geologic events in the southeast millions of years ago. More practically, the fault warns of the possibility of earth tremors in this vicinity and tells us we need to design buildings accordingly.

A series of sequential sketches suggests the geologic history of the Belair-Augusta area. Each sketch shows what we believe the earth looked like from the surface down to several thousand feet. Each is oriented northwest-southeast, passes through Belair, and continues beyond in either direction for several miles.

The oldest rocks at Belair (**Fig. A**) are exposed in the lowest portions of the clay pits below the conglomerate and sandstone. They now are phyllites, but originally were volcanic ash deposits laid down by the repeated eruption of many volcanoes. In other areas, lavas poured out onto the surface. The exact age of these volcanic deposits is not known, but they are believed to be 500 to 600 million years old. This volcanic outpouring lasted a considerable length of time (we don't know exactly how long) and covered an extremely large area: these volcanic rocks form an almost continuous belt from Newfoundland to at least Macon, where they disappear under the younger sediments of the Coastal Plain.

Volcanic action stopped and the land sank beneath the sea, allowing volcanic deposits to be buried under thousands of feet of silt and mud (**Fig. B**). As the volcanic rock strata were buried deeper and deeper, they became hotter and the pressure grew greater. Finally they were recrystallized into phyllites. As this "metamorphism" was taking place, the rocks were being folded by tremendous forces

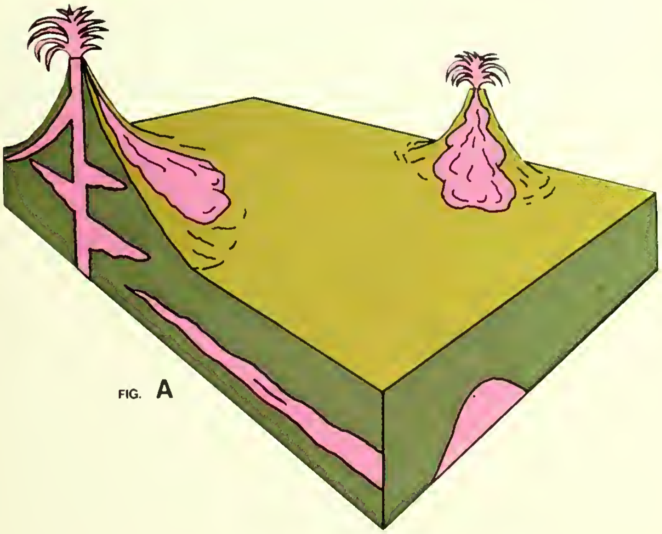


FIG. **A**

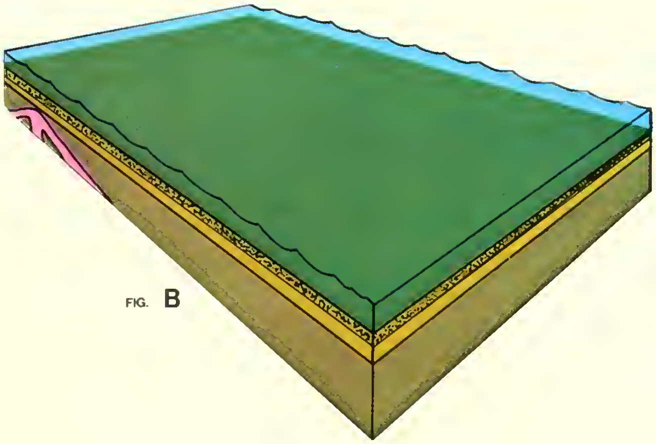


FIG. **B**

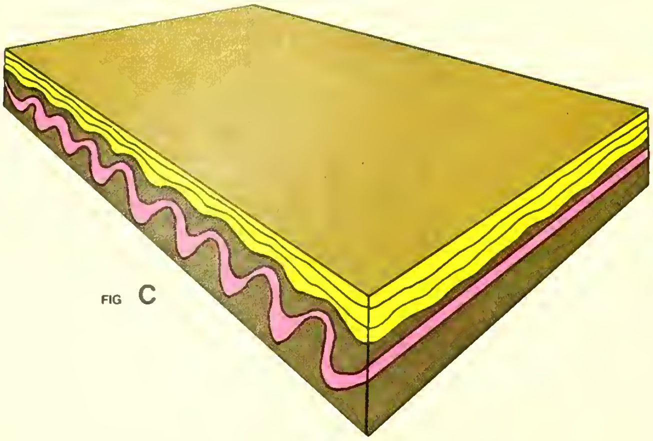


FIG C

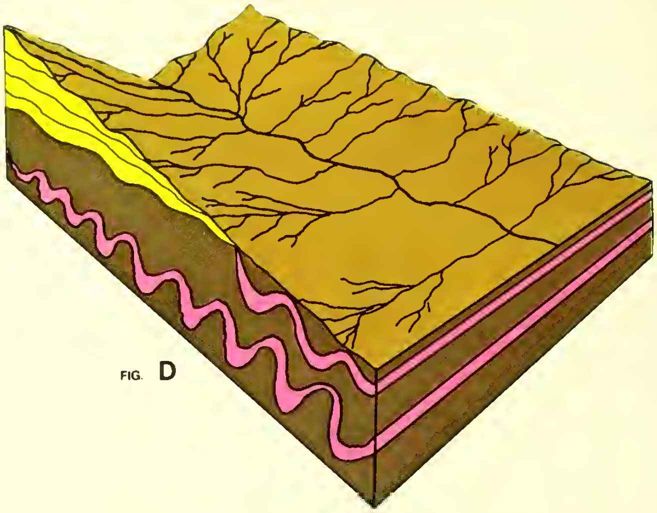


FIG. D

squeezing from the sides (**Fig. C**). The folding and metamorphism stopped some 350 million years ago.

The exact origin of the squeezing force is not known, but many scientists believe it was produced by the slow irresistible westward creep of the rocks of the Atlantic ocean floor. This theory of sea floor spreading is based on the fact that new volcanoes currently are being formed in the center of the ocean along ridges parallel to the continents.

As this happens, older lavas are pushed aside, and so the sea floor moves away from its center much like a conveyor belt. The lavas of the sea floor crowd against the margin of the continents, but since the lavas are denser, they plunge beneath, folding the continental rocks and producing new volcanic chains and earthquakes. This sequence stops when the adjacent portion of the sea floor stops spreading.

The key below indicates the colors used to represent various geological features in the diagrams. For an explanation of the rock formations, see Dr. O'Connor's short feature "Rocks" at the end of this article.

🟪	Lava	🟦	Water
🟫	Volcanic ash	🟨	Sand and clay
🟩	Tuscaloosa sand and gravel	🟧	Earth's surface

Once the folding and metamorphism stopped, the rocks no longer were being buckled down. They flexed upwards, rising up into high mountains (**Fig. D**). But the mountains immediately were exposed to erosion, and over hundreds of millions of years eventually wore down to a broad undulating plain. This plain now lies buried beneath the sediments of the Tuscaloosa Formation (**Fig. E**).

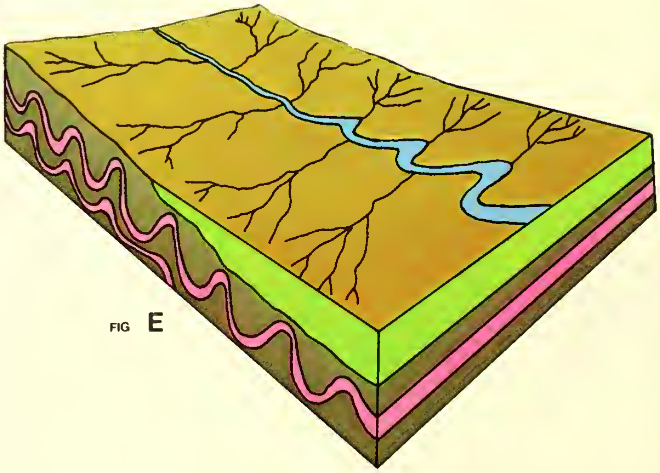


FIG E

By the end of the Cretaceous Period (**Fig. E**) (about 70 million years ago) this plain was flooded by the sea (we are not sure whether the land sank or the ocean rose).

The coarse sands and gravels of the Tuscaloosa Formation were laid down by broad meandering rivers which carried their load of sediment down to the ocean from mountains near the present Blue Ridge.

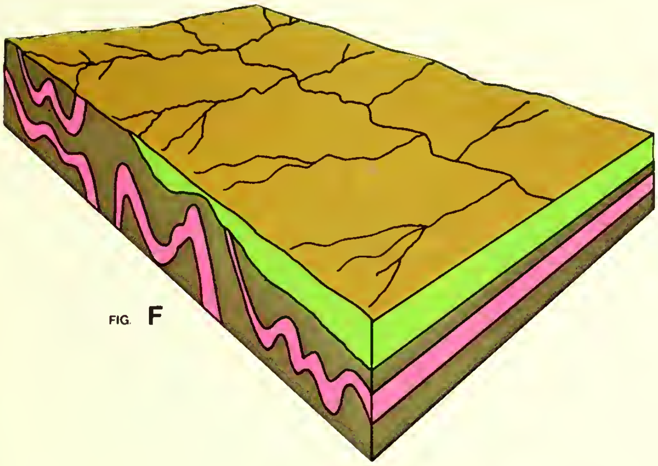


FIG. **F**

A few million years later (**Fig. F**) the seas retreated and the rivers began to carve into the "freshly" deposited Tuscaloosa sands and gravels, washing them into the ocean. This sequence of flooding and drying was repeated several times to produce the sedimentary deposits of the Coastal Plain. At Belair, however, we see only the oldest of these cycles—the Tuscaloosa Foundation.

Sometime between the end of the Cretaceous and a few thousand years ago the Belair fault formed (**Fig. G**). We know that it must have been quite some time ago, because although there has been 40 feet of vertical movement along the fault, there is little evidence of it at the surface.

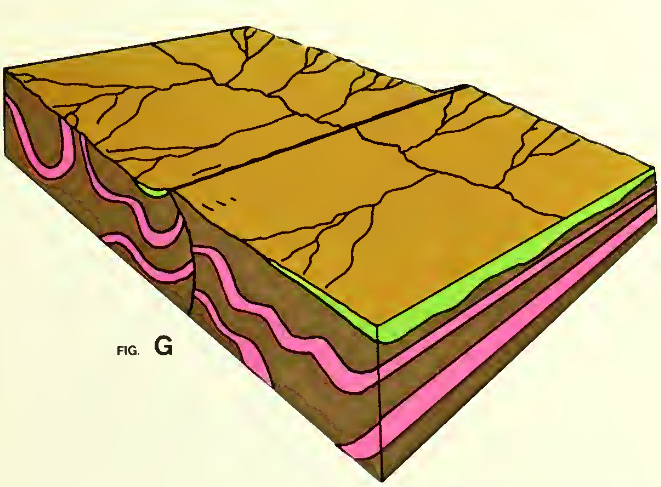


FIG. **G**

Immediately after the fault moved, there would have been a high ridge, a "fault scrap" (**Fig. G**). We do not see such a ridge now, which indicates that the fault occurred long enough ago for erosion to have completely leveled it (**Fig. H**). However, we do not know whether the movement took place millions or only several thousands of years ago.

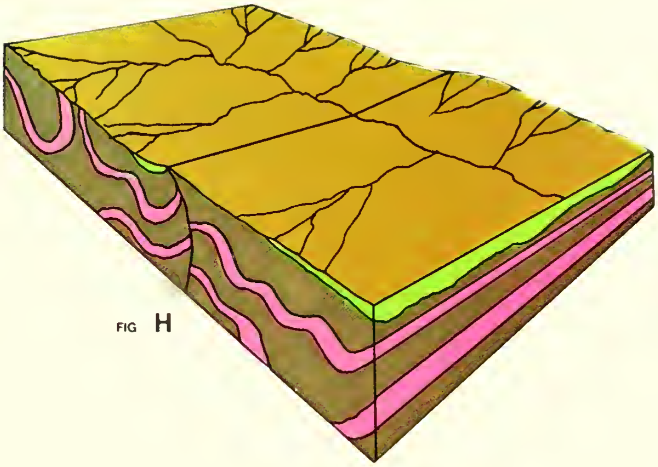


FIG **H**

Studies of the Belair fault will establish when, and, perhaps, why this fault took place, information which will increase our knowledge of the geological history of the state.

Before the discovery at Belair, the youngest faults in the metamorphic rock of the southeastern U.S. were thought to be 180 to 230 million years old. These faults are found at the surface in North Carolina. In Georgia, they are found buried under the Coastal Plains sediments south of Augusta. The discovery of the Belair fault tells us there are faults at least as young as 70 million years and possibly much younger.

Since man lives on the earth's geologic structures, and since the occurrence of natural resources is determined by geology, our interest in the fault goes beyond the academic.

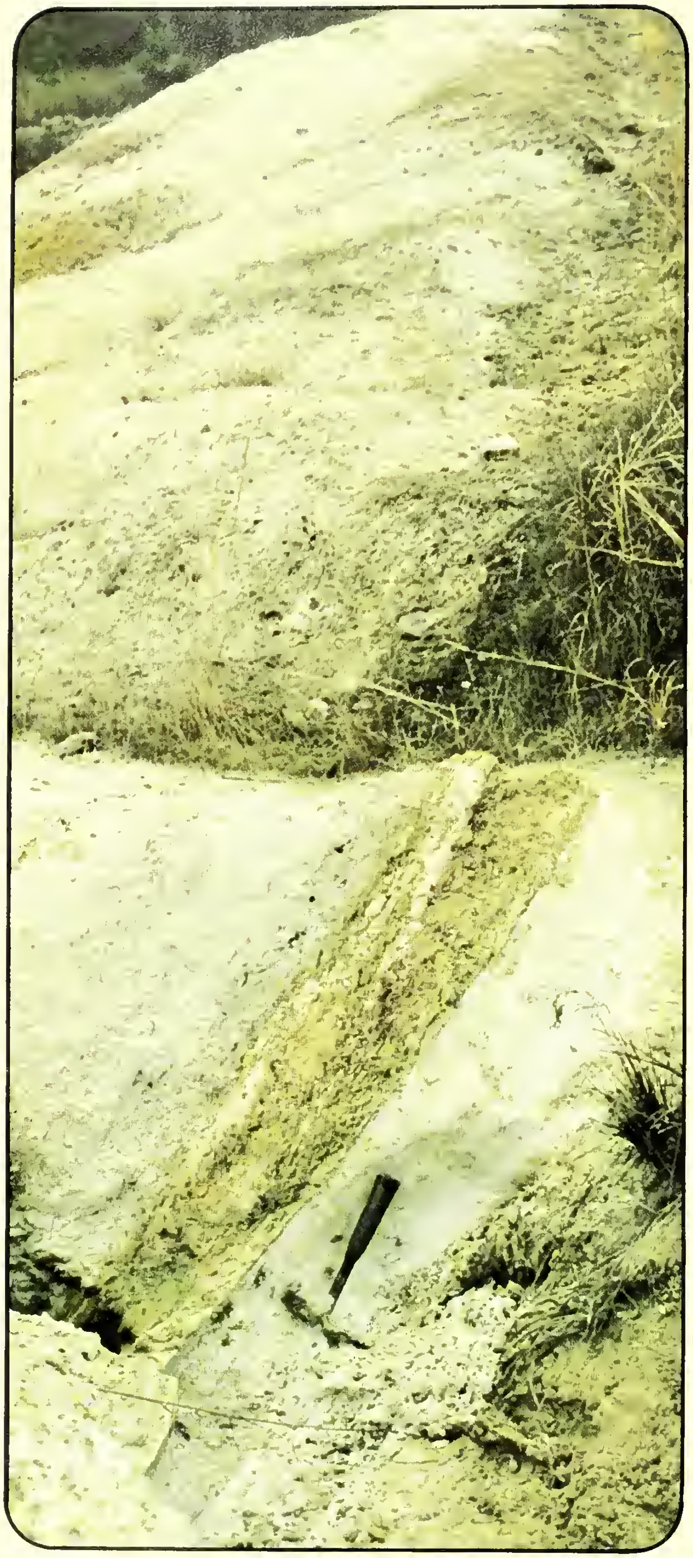


Photo by Dr. Bruce O'Connor

This is a view south along the top of the fault. The dark layer just above the hammer is the fault line.

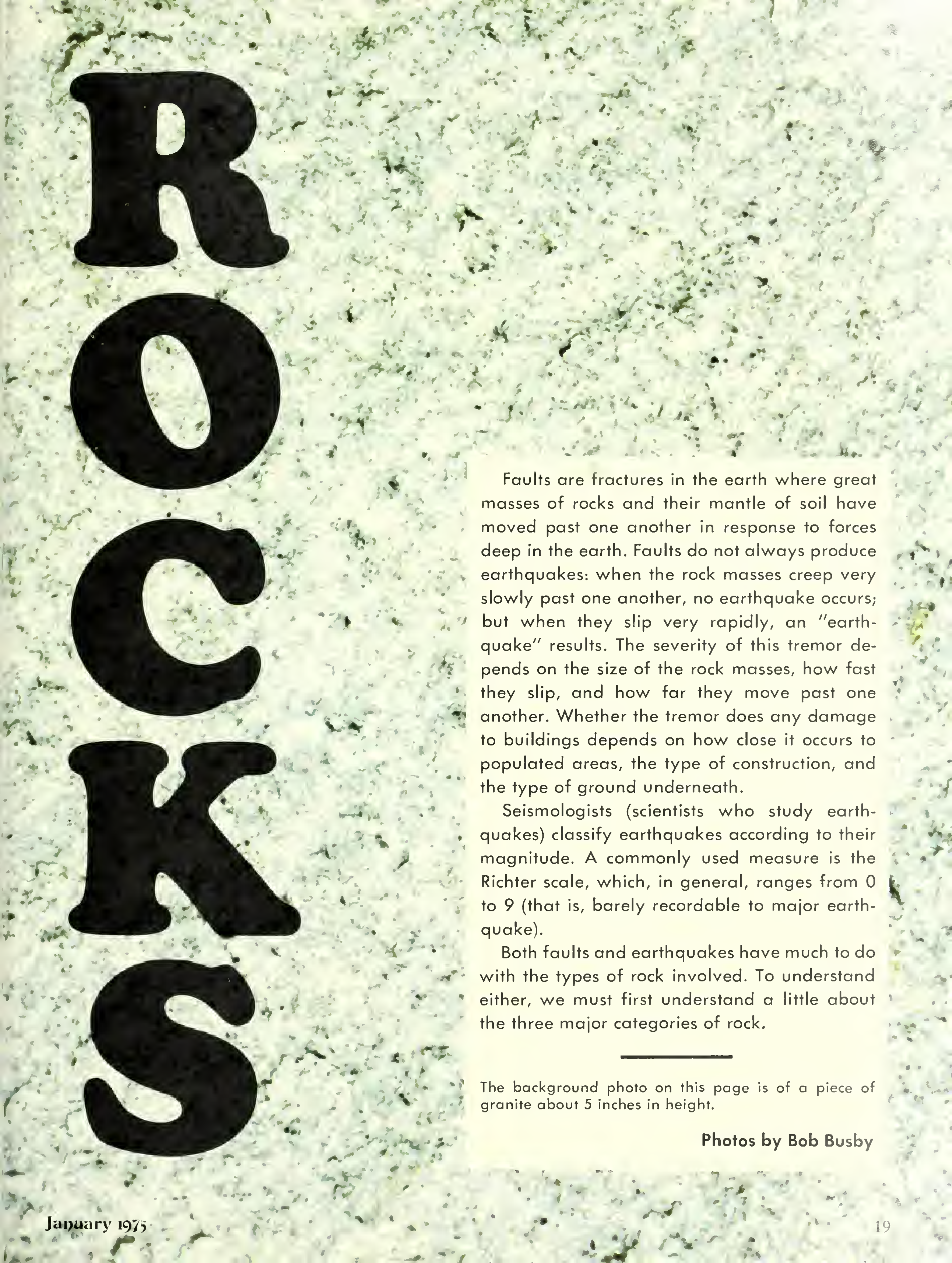
The Belair fault may be 60 or 70 million years old and be part of a fault system which now is inactive. This would make it about as safe as a fault can be.

But until the current studies are completed, we do not know that it is not much younger (i.e. only a few thousand years old), and related to still active faults.

Indeed, we know that tremors do occur north of this area. Last August, an earthquake of approximately 4.5 magnitude occurred on the west bank of the Savannah River northeast of Lincolnton, Lincoln County. And there has been quite a long history of earthquakes in the area—most of them too small to be felt, but some of them rather large. In fact, the largest earthquake in Georgia occurred in 1875, somewhere west of Lincolnton.

As far as we know, the great majority of these earthquakes occurred well north of Belair and Augusta, mostly north of the Clark Hill dam. However, until we know more about the Belair fault, until we know more about the earthquake activity of the entire region, we had best play it safe and design our buildings with this possibility in mind.

Dr. Bruce J. O'Cannor is a geologist with the Earth and Water Division of the Department of Natural Resources. His current duties involve the examination of soils and rock outcrops for the preparation of geological maps and reports. He discovered the Belair fault during a field investigation.



ROCKS

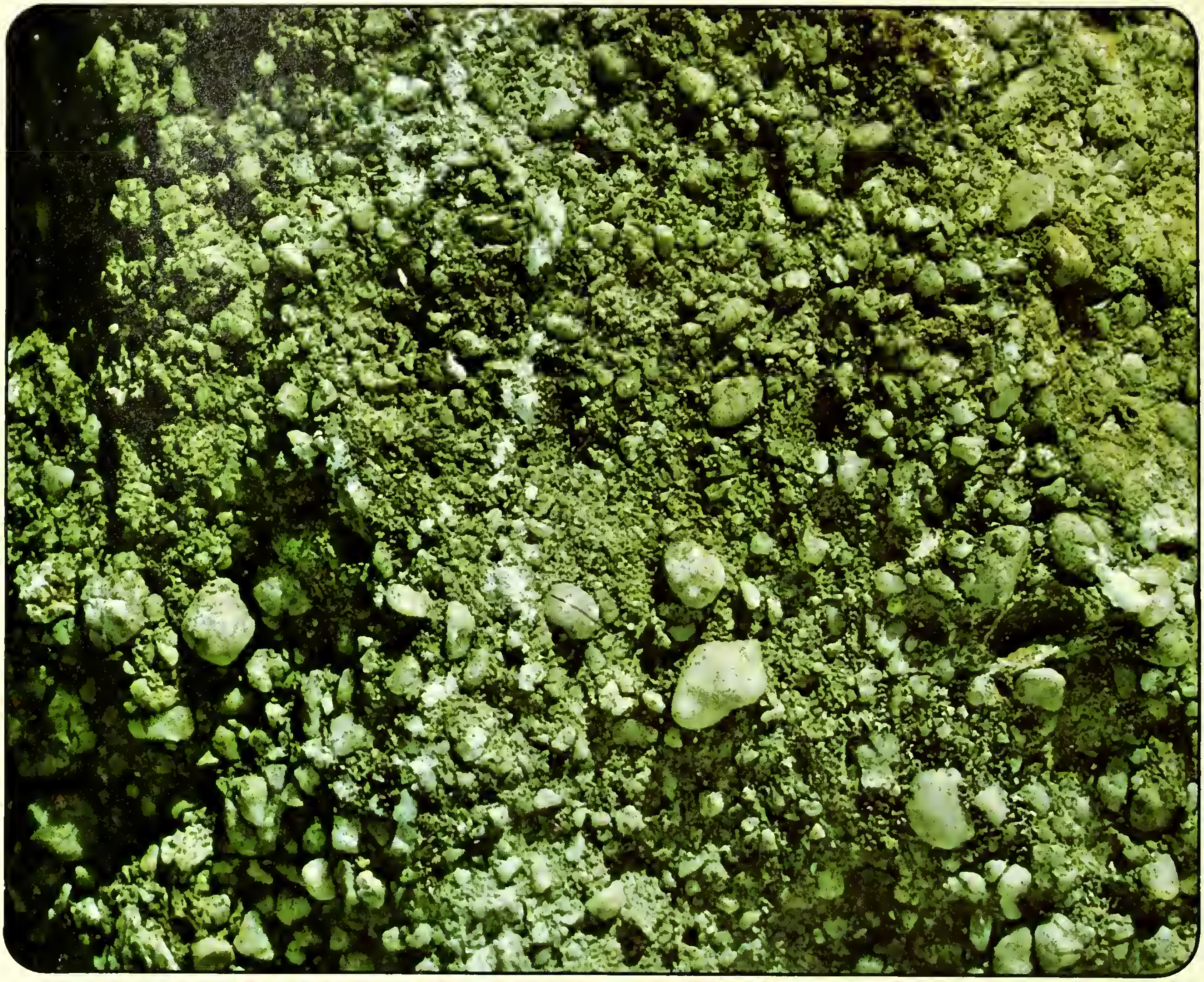
Faults are fractures in the earth where great masses of rocks and their mantle of soil have moved past one another in response to forces deep in the earth. Faults do not always produce earthquakes: when the rock masses creep very slowly past one another, no earthquake occurs; but when they slip very rapidly, an "earthquake" results. The severity of this tremor depends on the size of the rock masses, how fast they slip, and how far they move past one another. Whether the tremor does any damage to buildings depends on how close it occurs to populated areas, the type of construction, and the type of ground underneath.

Seismologists (scientists who study earthquakes) classify earthquakes according to their magnitude. A commonly used measure is the Richter scale, which, in general, ranges from 0 to 9 (that is, barely recordable to major earthquake).

Both faults and earthquakes have much to do with the types of rock involved. To understand either, we must first understand a little about the three major categories of rock.

The background photo on this page is of a piece of granite about 5 inches in height.

Photos by Bob Busby



This is a quartz pebble conglomerate, a sedimentary Rock. This section is about 4.5 inches wide.

SEDIMENTARY rocks are a blend of fragments of pre-existing rocks broken up by erosion. These rock particles are deposited as sediment in stream beds and lake beds, and on the ocean floor. When this sediment is buried a few hundred feet, it is compacted by the weight of the overlying sediments. It also may become cemented by mineral matter left by water percolating through pores between the sediment particles.

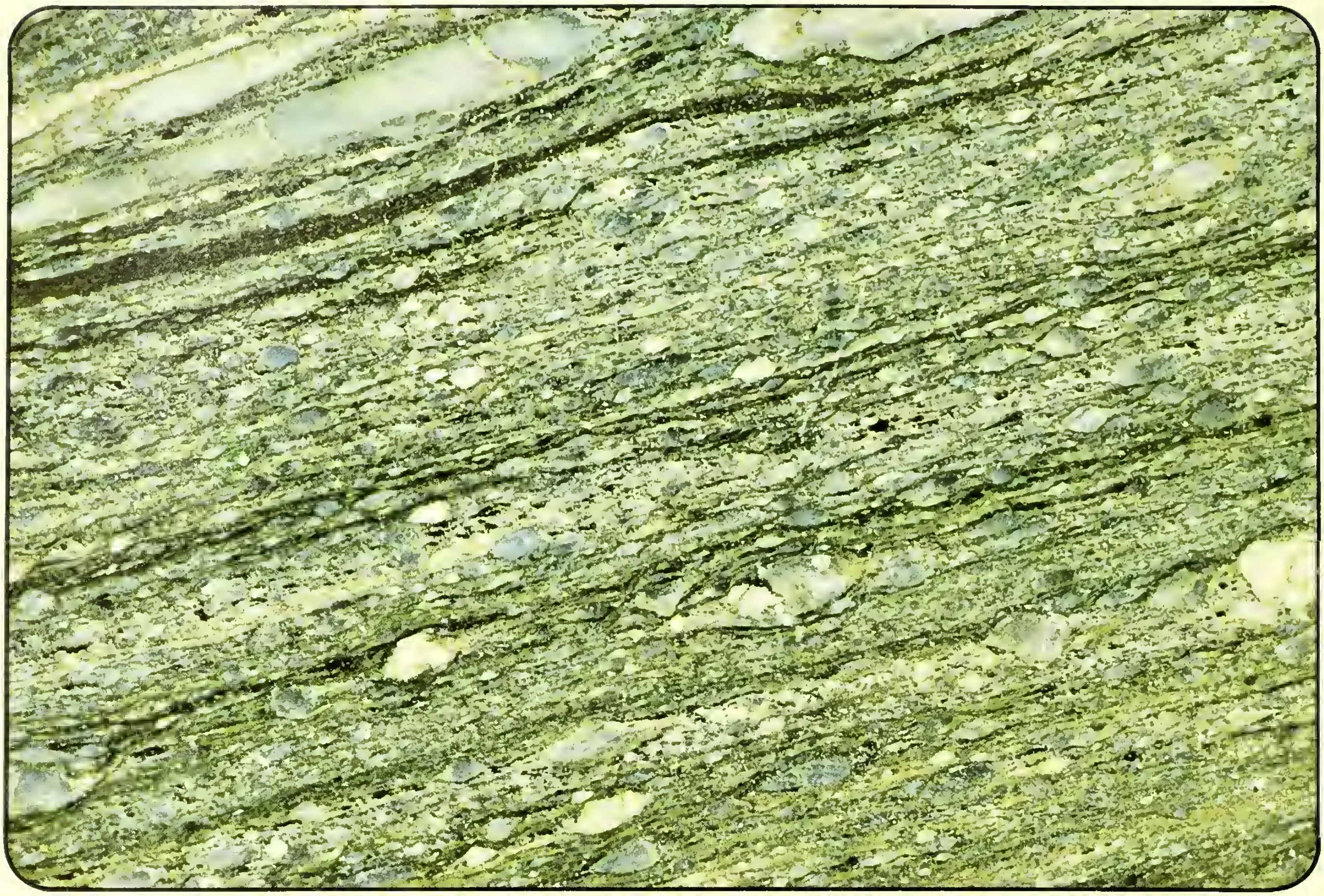
In this way all sediments can be turned into rocks: gravels into conglomerates, sands into sandstone, clay into claystone and shale, and silt into siltstone. The rocks of the Georgia coastal plain are sediments composed predominantly of sandstone, siltstone, kaolin (a pure variety of claystone) and some conglomerate.

The sand and gravel sediments at Belair are known as the Tuscaloosa Formation. A "formation" is a group of rocks which has a distinctive set of characteristics that distinguished it from other groups. The Tuscaloosa shows stratification, a feature common to this type of deposit. That is, the sediments are layered or stratified and these layers are stacked in the order they were deposited—the oldest on the bottom and the youngest at the top. Normally these strata are deposited horizontally; it is only through sliding, faulting, or folding that the layers are tilted.

IGNEOUS rocks are formed by the solidification of molten rock called "magma." (When magma erupts on to the surface at a volcano it is called "lava.") In Georgia, this magma cooled slowly and crystallized into coarse-grained rocks. Such rocks generally are massive and unlayered.

They may be called "granite," but a wide variety of names is used for scientific identification. There are no granitic igneous rocks at Belair, but they become abundant to the north. They are particularly well exposed around Appling and are extensively quarried at Elberton.

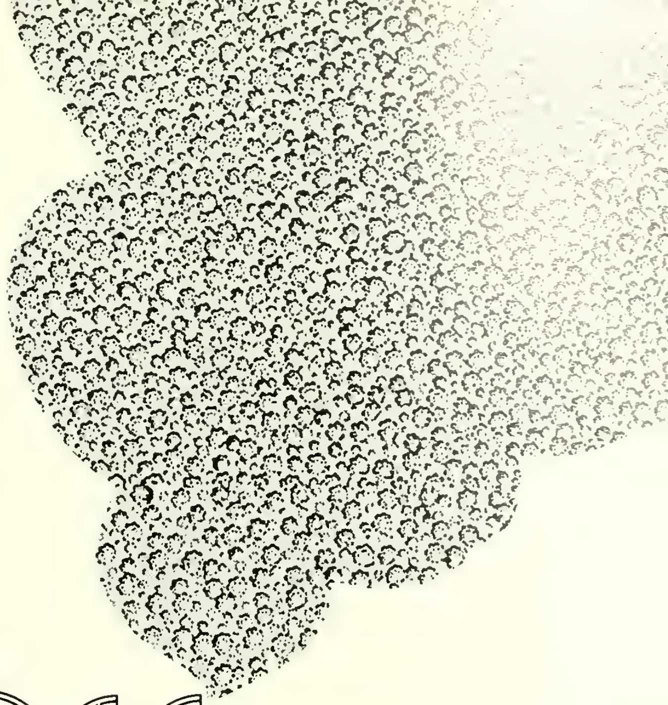
The background photo is of a quartz and feldspar pegmatite, a coarse-grained granite. The section reproduced here is about 3 inches in height.



METAMORPHIC rocks are formed from all other types of rocks by the combined effects of heat and pressure when the rocks become buried thousands of feet. There the great weight of the overlying rock and the tremendous heat (the earth's temperature rises one degree Fahrenheit for every 100 feet in depth) force the minerals to recrystallize into new ones. This process is much like the blacksmith working an iron bar on the forge.

Shale and claystone recrystallize into phyllite and schist, sandstones and granites into gneisses, limestone into marble, and lava into amphibolite. These rocks typically show a swirling or twisted appearance from the folding and crumpling of the original strata. The metamorphic rocks at Belair are fine-grained phyllite, resembling a lustrous shale. They originally were fine-grained ash spewed out by volcanoes.

This is a quartz mica schist, a metamorphosed pebbly shale that perhaps once resembled the material in the photograph on p. 20. The original section is about 3 inches wide.



smoke chasers

by Joe Cullens

Photos by Cathy Cardarelli

Driving home from work one afternoon, you suddenly find yourself engulfed in the noxious exhaust of some guy's 15-year old clunker. “#$%‡&*!” you mutter to yourself as you pull out to pass. Gulping desperately for a bit of fresh air, you scarcely notice that the air you frantically inhale is heavily laden with pollution from a nearby industrial plant.

Only a very few of the common industrial air pollutants can be detected by the human sense of smell. Some of the worst are impossible to detect without sensitive equipment.

All of us are familiar with the smoke and haze which lately have become common. Familiarity has bred the proverbial contempt for the industrial smokestack and the acrid plume belching forth to mottle the landscape and haze the once-blue sky.

While the goods and services provided by the nation's industries are vital to our economy, a natural resource more precious than all the world's gold is being fouled to the point of becoming a noxious poison. The very air we breathe is at stake.

Take a close look at a large public building the next time you have a chance. The surface dirt is bad enough, but what you don't see is far worse. A common pollutant, sulfur dioxide, combines with water to form sulfuric acid. It is eating away at brick, stone, steel and yes . . . your lungs.

Other agents, while harmless initially, become dangerous when exposed to sunlight. “Photochemical smog” is a combination of these and other chemicals in reactions triggered by sunlight.

Industry should not bear the entire blame, for oil-burning furnaces, trash incinerators, open burning of leaves and brush, and the ever-present automobile all share the responsibility.

Classroom instruction begins the first phase of a two-part certification program. Here the students are taught the basics of air pollution and are given the elements of smoke reading.

Experts say the internal combustion engine chugs out about 70 percent of the air pollution we breathe each day.

The other 30 percent comes from other forms of combustion and from dusts and chemicals created by manufacturing and mining operations.

Pollution crises like the "killer" smog that struck London in 1952—killing 3,000—may be commonplace in the not-too-distant future unless something is done. We have become familiar with "smog alerts" in our major cities, and environmental officials are trying to make these a thing of the past.

This sounds like a nightmare from the depths of Edgar Allen Poe's imagination, but it is happening right now, right where you live: run your finger across the finish of that shiny new car (notice the soot?), take a look at the wood trim around your windows, or sample the oily deposit on the glass.

Fortunately, the rapid advance of industrial technology—which created the mess in the first place—has given us the means to cope with and cure this pollution. Since there are remedies, stiff federal and state regulations based on these possible remedies have made it possible for violators to be prosecuted for their negligence.

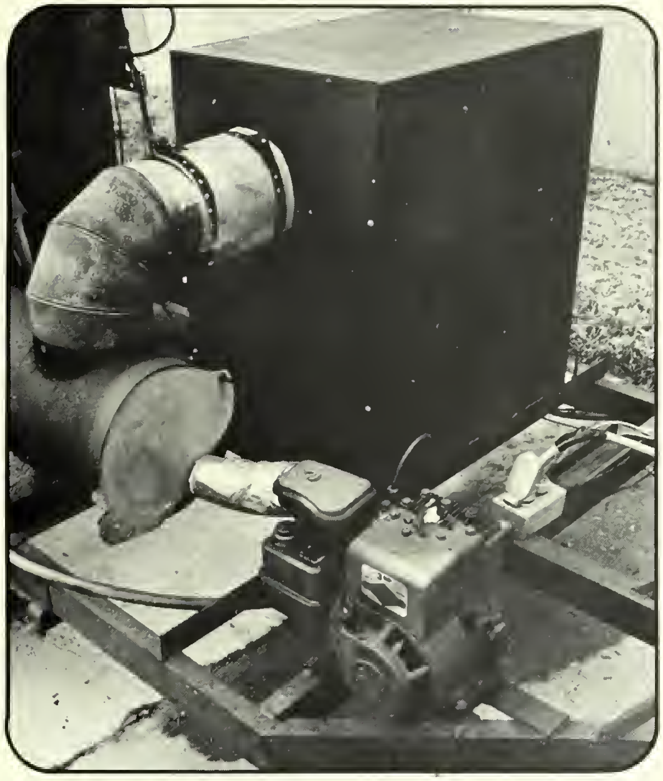
Regulations impose fines and exact punishment for repeated offenders and curb violators, from the worst of the industrial pollutors to the driver of that 15-year-old clunker. New plants must be constructed in line with rigid standards and old plants must be brought up to standards.

Cleaning up our air is expensive. Estimates for industrial cleanup alone run as high as $20 billion over the next three years. . . probably a small price to pay for a healthier environment when you consider the economic cost from polluted air (not counting health problems) is estimated to be over $12 billion a year.

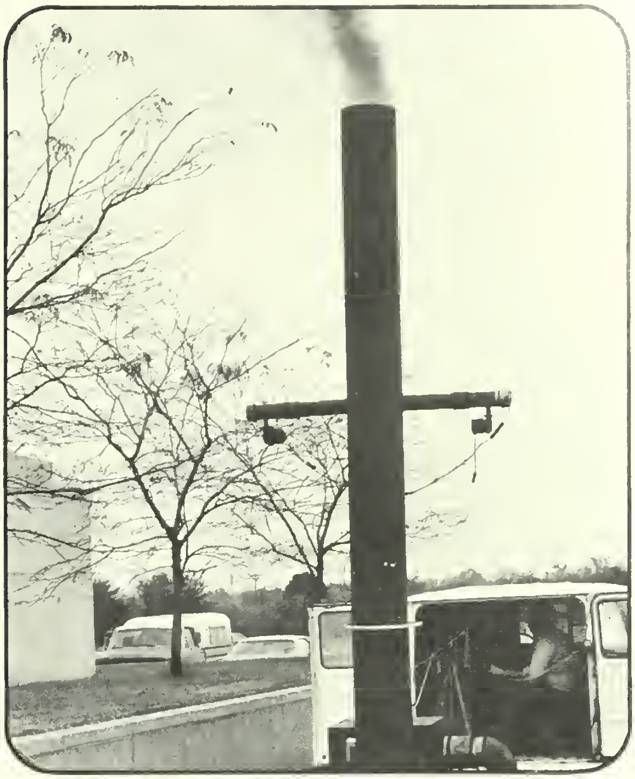
The Air Quality Control Section of the Environmental Protection Division is working in close cooperation with the federal Environmental Protection Agency to get the air we breathe back in healthy shape.

In 1967, the Georgia legislature passed into law an act which set up the Air Quality Control branch of the State Health Department.

The Health Department since has been merged into the Department of Human Resources and the Air Quality Control Branch subsequently came under the Department of



The smoke generator . . . this is the heart of the smoke school course. Relatively simple, the device uses a gasoline engine to produce black smoke from fuel oil dripped into its hot exhaust. The smoke is propelled up the flue by an electrically powered blower. White smoke is produced inside the metal box (top center), when xyline is burned in a tray.



Notice the two pipe-like extensions on either side of the flue. On one side is a light source, on the other a photoelectric cell. Light passing through the smoke column strikes the photoelectric cell with varying intensity, depending on the density of the smoke.

Natural Resources' Environmental Protection Division. Based on that 1967 law, and subsequent legislation, the Air Quality Control Section has the "teeth" to make its regulations stick.

In close cooperation with the federal government, Air Quality Control began conducting federally approved "smoke schools" to train department personnel, federal employees, and industry associates in the techniques of smoke density determination.

The "smoke schools" began in 1972 as a result of stiff legislation imposing fines on violators of air pollution standards. Enforcement personnel had to be able to visually determine whether an industrial plant was in compliance with the new regulations.

A special classroom/laboratory course has been developed to train those needing the knowledge. The course is offered free to anyone interested.

By federal regulation, field engineers of the Department of Natural Resources who evaluate industrial and other pollution must be re-certified every six-months, but under DNR policy they are re-certified every four months.

The classroom training includes a comprehensive look at the reasons for and sources of air pollution. Students are trained in visual smoke density evaluation and must pass a rigorous test of their abilities in a laboratory situation which simulates conditions they'll meet in the field.

The accompanying pictures explain in greater detail exactly what is involved in a "smoke school." Since we all live in a closed system, we must live with what we have. DNR is making sure we have capable people looking out for the air we breathe.

1 The testing technician records the density read through the metering system (top right). The valves over his head are used to control the flow of fuel oil or xyline and thereby increase or decrease the density of the smoke column to the desired level.

2 When the meter is steady enough to give an accurate reading, the signal is given to the students to "Mark," or read the intensity visually.

3 When test time rolls around they're on their own. Students are cautioned against continually observing the column, since many of the densities are of such gradual increase or decrease they can easily be misread.

4 Students here are "reading smoke." Before the test, they're shown several comparison smoke levels.

5 Smiles indicate those happy students who have passed this "acid test" of their smoke reading ability.

1975 GEORGIA TIDE TABLES

This Tide Table for 1975 is furnished to you compliments of OUTDOORS IN GEORGIA for your use in coastal fishing and hunting.

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P.S. Please remember . . . be a good sportsman. Obey all regulations, and don't litter!

Times given are Eastern Standard—adjust for Daylight Saving by adding one hour.

Calculations are for Savannah River Entrance. Corrections for other locations can be made by using the accompanying tidal difference data. Merely add or subtract the correction as indicated for the specific location.

	DIFFERENCES Time	
	High Water Hrs./Min.	**Low Water Hrs./Min.**
GEORGIA Savannah River		
Tybee Light	—0 08	—0 15
Port Wentworth	+0 33	+0 41
Tybee Creek and Wassaw Sound		
Tybee Creek entrance	—0 07	+0 02
Thunderbolt	+0 34	+0 09
Isle of Hope, Skidaway River	+0 52	+0 25
Ossabaw Sound		
Egg Island	+0 06	+0 07
Fort McAllister, Ogeechee River	+0 50	+1 13
Cane Patch Creek entrance	+0 57	+0 40
St. Catherines and Sapelo Sounds		
Walburg Creek entrance	+0 25	+0 20
Kilkenny Club, Kilkenny Creek	+0 31	+0 13
Sunbury, Medway River	+0 56	+0 42
Blackbeard Island	+0 20	+0 19
Mud R., at Old Teakettle Cr.	+0 47	+0 43

	DIFFERENCES Time	
	High Water Hrs./Min.	**Low Water Hrs./Min.**
Doboy and Altamaha Sounds		
Blackbeard Cr., Blackbeard I.	+0 21	+0 44
Sapelo Island	0 00	+0 02
Darien, Darien River	+1 10	+1 12
Wolf Island	+0 06	+0 35
Champney I., S. Altamaha R.	+1-12	+2 30
St. Simons Sound		
St. Simons Sound bar	+0 01	—0 05
St. Simons Light	+0 24	+0 28
Troup Cr. entr., Mackay R.	+0 54	+0 49
Brunswick, East River	+0 55	+0 40
St. Andrew Sound		
Jekyll Point	+0 28	+0 28
Jointer Island, Jointer Creek	+1 02	+0 49
Dover Bluff, Dover Creek	+0 57	+0 49
Cumberland Wh., Cumb. R.	+0 40	+0 42
Cumberland Sound		
St. Marys Entr., north jetty	+0 15	+0 15
Crooked River entrance	+1 23	+1 12
Harritts Bluff, Crooked River	+2 09	+2 12
St. Marys, St. Marys River	+1 21	+1 13

JANUARY, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Wed.	10:15	8.0	10:48	7:2	4:13	4:43
2 Thu.	11:09	7.6	11:46	7.1	5:06	5:35
3 Fri.	—	—	12:04	7.2	6:02	6:29
4 Sat.	12:46	7.0	1:03	6.7	7:03	7:27
5 Sun.	1:49	6.9	2:01	6.4	8:08	8:28
6 Mon.	2:53	6.9	3:03	6.1	9:13	9:30
7 Tue.	3:59	6.9	4:10	5.9	10:13	10:25
8 Wed.	5:02	7.0	5:13	6.0	11:09	11:18
9 Thu.	5:58	7.1	6:04	6.1	—	12:00
10 Fri.	6:45	7.2	6:51	6.2	12:09	12:49
11 Sat.	7:27	7.2	7:32	6.3	12:57	1:36
12 Sun.	8:04	7.2	8:09	6.3	1:41	2:18
13 Mon.	8:38	7.1	8:44	6.3	2:23	2:58
14 Tue.	9:12	6.9	9:19	6.3	3:02	3:34
15 Wed.	9:44	6.7	9:55	6.2	3:40	4:11
16 Thu.	10:18	6.5	10:33	6.2	4:16	4:47
17 Fri.	10:53	6.2	11:14	6.2	4:56	5:25
18 Sat.	11:32	6.0	11:57	6.2	5:36	6:05
19 Sun.	—	—	12:14	5.8	6:23	6:51
20 Mon.	12:46	6.2	1:05	5.6	7:15	7:43
21 Tue.	1:40	6.3	1:57	5.5	8:17	8:42
22 Wed.	2:37	6.4	3:00	5.5	9:19	9:40
23 Thu.	3:43	6.6	4:05	5.7	10:20	10:38
24 Fri.	4:47	7.0	5:10	6.0	11:16	11:33
25 Sat.	5:47	7.5	6:11	6.5	—	12:12
26 Sun.	6:40	7.9	7:06	7.0	12:27	1:05
27 Mon.	7:32	8.2	7:57	7.3	1:22	1:57
28 Tue.	8:20	8.3	8:47	7.6	2:15	2:46
29 Wed.	9:09	8.2	9:37	7.7	3:07	3:34
30 Thu.	9:58	7.9	10:32	7.6	3:58	4:23
31 Fri.	10:50	7.5	11:25	7.4	4:50	5:11

Moon Phases:
Last Qtr. 4th, New Moon 12th, 1st Qtr. 20th, Full Moon 27th

FEBRUARY, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Sat.	11:44	7.0	—	—	5:43	6:02
2 Sun.	12:23	7.1	12:38	6.5	6:42	6:58
3 Mon.	1:24	6.8	1:36	6.0	7:43	8:01
4 Tue.	2:25	6.6	2:37	5.7	8:48	9:03
5 Wed.	3:34	6.4	3:43	5.5	9:48	10:02
6 Thu.	4:39	6.4	4:49	5.6	10:46	10.57
7 Fri.	5:39	6.6	5:47	5.8	11:39	11:48
8 Sat.	6:26	6.7	6:32	6.0	—	12:25
9 Sun.	7:07	6.8	7:11	6.2	12:35	1:09
10 Mon.	7:44	6.9	7:46	6.4	1:20	1:51
11 Tue.	8:15	6.9	8:20	6.5	2:00	2:29
12 Wed.	8:44	6.8	8:53	6.6	2:39	3:05
13 Thu.	9:15	6.6	9:25	6.6	3:15	3:39
14 Fri.	9:45	6.4	10:00	6.6	3:50	4:13
15 Sat.	10:19	6.3	10:39	6.6	4:26	4:48
16 Sun.	10:55	6.1	11:21	6.5	5:04	5:24
17 Mon.	11:36	5.9	—	—	5:46	6:07
18 Tue.	12:07	6.5	12:26	5.7	6:36	6:59
19 Wed.	1:03	6.5	1:21	5.6	7:37	8:03
20 Thu.	2:03	6.5	2:26	5.6	8:45	9:09
21 Fri.	3:09	6.6	3:37	5.8	9:51	10:13
22 Sat.	4:18	7.0	4:50	6.2	10:52	11:13
23 Sun.	5:23	7.4	5:55	6.8	11:47	—
24 Mon.	6:22	7.8	6:50	7.4	12:10	12:41
25 Tue.	7:15	8.1	7:41	7.9	1:05	1:33
26 Wed.	8:03	8.3	8:30	8.2	1:59	2:23
27 Thu.	8:51	8.1	9:21	8.2	2:51	3:12
28 Fri.	9:39	7.8	10:11	8.0	3:42	3:59

Moon Phases:
Last Qtr. 3rd, New Moon 11th, 1st Qtr. 19th, Full Moon 26th

MARCH, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Sat.	10:29	7.4	11:03	7.7	4:32	4:47
2 Sun.	11:20	6.9	11:57	7.3	5:22	5:36
3 Mon.	—	—	12:13	6.4	6:17	6:29
4 Tue.	12:55	6.8	1:11	5.9	7:16	7:32
5 Wed.	1:57	6.4	2:09	5.6	8:18	8:35
6 Thu.	3:03	6.2	3:16	5.5	9:21	9:37
7 Fri.	4:09	6.2	4:21	5.6	10:17	10:34
8 Sat.	5:09	6.3	5:18	5.8	11:07	11:23
9 Sun.	5:58	6.5	6:06	6.2	11:55	—
10 Mon.	6:37	6.6	6:45	6.5	12:11	12:37
11 Tue.	7:14	6.7	7:20	6.7	12:54	1:17
12 Wed.	7:46	6.8	7:52	6.9	1:34	1:56
13 Thu.	8:15	6.7	8:24	7.1	2:13	2:32
14 Fri.	8:44	6.6	8:56	7.1	2:50	3:07
15 Sat.	9:15	6.5	9:29	7.1	3:25	3:42
16 Sun.	9:47	6.3	10:06	7.1	4:01	4:15
17 Mon.	10:24	6.2	10:51	7.0	4:38	4:51
18 Tue.	11:09	6.0	11:39	6.9	5:20	5:36
19 Wed.	11:59	5.9	—	—	6:10	6:29
20 Thu.	12:34	6.8	12:58	5.8	7:10	7:35
21 Fri.	1:35	6.8	2:06	5.9	8:17	8:45
22 Sat.	2:43	6.8	3:20	6.2	9:25	9:53
23 Sun.	3:53	7.0	4:31	6.7	10:27	10:54
24 Mon.	5:02	7.4	5:37	7.4	11:23	11:53
25 Tue.	6:00	7.7	6:33	8.0	—	12:16
26 Wed.	6:53	8.0	7:23	8.4	12:48	1:09
27 Thu.	7:44	8.1	8:11	8.7	1:41	1:58
28 Fri.	8:30	8.0	9:00	8.6	2:33	2:48
29 Sat.	9:18	7.7	9:48	8.3	3:23	3:34
30 Sun.	10:05	7.2	10:39	7.9	4:11	4:21
31 Mon.	10:56	6.8	11:32	7.4	5:01	5:09

Moon Phases:
Last Qtr. 4th, New Moon 12th, 1st Qtr. 20th, Full Moon 27th

APRIL, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Tue.	11:48	6.3	—	—	5:51	6:02
2 Wed.	12:25	6.9	12:42	6.0	6:47	6:57
3 Thu.	1:21	6.4	1:39	5.7	7:46	8:02
4 Fri.	2:24	6.2	2:42	5.7	8:48	9:04
5 Sat.	3:26	6.0	3:43	5.8	9:40	10:01
6 Sun.	4:25	6.1	4:39	6.1	10:30	10:52
7 Mon.	5:15	6.2	5:31	6.4	11:17	11:39
8 Tue.	6:01	6.4	6:11	6.8	—	12:00
9 Wed.	6:38	6.6	6:48	7.1	12:24	12:40
10 Thu.	7:12	6.6	7:22	7.3	1:04	1:20
11 Fri.	7:45	6.6	7:55	7.5	1:45	1:57
12 Sat.	8:17	6.6	8:29	7.6	2:24	2:36
13 Sun.	8:49	6.5	9:05	7.6	3:01	3:10
14 Mon.	9:23	6.4	9:45	7.5	3:39	3:50
15 Tue.	10:03	6.3	10:27	7.4	4:19	4:29
16 Wed.	10:50	6.2	11:19	7.3	5:03	5:17
17 Thu.	11:45	6.1	—	—	5:51	6:10
18 Fri.	12:17	7.1	12:47	6.1	6:51	7:16
19 Sat.	1:18	7.0	1:55	6.3	7:56	8:28
20 Sun.	2:22	7.0	3:04	6.7	9:02	9:31
21 Mon.	3:30	7.0	4:15	7.2	10:02	10:38
22 Tue.	4:38	7.2	5:19	7.8	10:58	11:34
23 Wed.	5:37	7.4	6:14	8.3	11:52	—
24 Thu.	6:32	7.6	7:06	8.6	12:30	12:43
25 Fri.	7:22	7.7	7:54	8.8	1:23	1:34
26 Sat.	8:09	7.6	8:40	8.6	2:14	2:23
27 Sun.	8:55	7.3	9:26	8.3	3:04	3:12
28 Mon.	9:43	7.0	10:14	7.8	3:51	3:58
29 Tue.	10:32	6.6	11:03	7.3	4:37	4:45
30 Wed.	11:20	6.3	11:54	6.9	5:26	5:32

Moon Phases:
Last Qtr. 3rd, New Moon 11th, 1st Qtr. 19th, Full Moon 25th

MAY, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Thu.	—	—	12:13	6.0	6:15	6:26
2 Fri.	12:44	6.5	1:05	5.9	7:09	7:23
3 Sat.	1:37	6.2	2:00	5.9	8:05	8:25
4 Sun.	2:32	6.0	2:57	6.0	8:58	9:22
5 Mon.	3:27	5.9	3:51	6.2	9:47	10:15
6 Tue.	4:22	6.0	4:44	6.6	10:36	11:03
7 Wed.	5:10	6.1	5:29	6.9	11:18	11:48
8 Thu.	5:55	6.2	6:11	7.3	—	12:00
9 Fri.	6:34	6.4	6:48	7.5	12:32	12:43
10 Sat.	7:11	6.4	7:28	7.8	1:16	1:22
11 Sun.	7:48	6.4	8:03	7.9	1:58	2:04
12 Mon.	8:24	6.4	8:43	7.9	2:40	2:45
13 Tue.	9:04	6.4	9:26	7.8	3:20	3:29
14 Wed.	9:49	6.4	10:14	7.7	4:03	4:12
15 Thu.	10:40	6.4	11:04	7.5	4:48	5:02
16 Fri.	11:38	6.4	—	—	5:39	5:59
17 Sat.	12:02	7.3	12:39	6.5	6:34	7:03
18 Sun.	1:00	7.1	1:43	6.7	7:37	8:12
19 Mon.	2:03	7.0	2:52	7.0	8:39	9:17
20 Tue.	3:08	6.9	3:58	7.4	9:38	10:20
21 Wed.	4:13	6.9	5:00	7.9	10:34	11:18
22 Thu.	5:15	7.0	5:58	8.2	11:27	—
23 Fri.	6:11	7.1	6:48	8.5	12:12	12:20
24 Sat.	7:02	7.1	7:37	8.5	1:05	1:10
25 Sun.	7:50	7.0	8:21	8.3	1:56	2:01
26 Mon.	8:35	6.9	9:07	8.0	2:45	2:48
27 Tue.	9:21	6.6	9:49	7.6	3:30	3:35
28 Wed.	10:06	6.4	10:35	7.2	4:16	4:19
29 Thu.	10:53	6.2	11:20	6.8	4:58	5:04
30 Fri.	11:41	6.0	—	—	5:44	5:51
31 Sat.	12:05	6.5	12:29	6.0	6:30	6:42

Moon Phases:

Last Qtr. 3rd, New Moon 11th, 1st Qtr. 18th, Full Moon 25th

JUNE, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Sun.	12:49	6.2	1:19	6.0	7:19	7:39
2 Mon.	1:37	6.0	2:08	6.1	8:11	8:37
3 Tue.	2:27	5.8	3:00	6.3	9:01	9:32
4 Wed.	3:19	5.8	3:52	6.6	9:51	10:23
5 Thu.	4:15	5.8	4:44	6.9	10:36	11:13
6 Fri.	5:07	5.9	5:34	7.2	11:21	—
7 Sat.	5:55	6.0	6:19	7.6	12:00	12:05
8 Sun.	6:37	6.2	7:01	7.8	12:46	12:51
9 Mon.	7:23	6.4	7:43	8.0	1:32	1:38
10 Tue.	8:05	6.5	8:27	8.1	2:18	2:24
11 Wed.	8:50	6.6	9:13	8.1	3:04	3:11
12 Thu.	9:38	6.6	10:00	7.9	3:49	4:00
13 Fri.	10:32	6.7	10:51	7.7	4:35	4:51
14 Sat.	11:29	6.8	11:46	7.4	5:24	5:46
15 Sun.	—	—	12:29	6.9	6:18	6:49
16 Mon.	12:44	7.1	1:31	7.0	7:16	7:54
17 Tue.	1:43	6.8	2:35	7.2	8:16	9:00
18 Wed.	2:46	6.6	3:41	7.4	9:16	10:01
19 Thu.	3:51	6.5	4:44	7.7	10:13	11:00
20 Fri.	4:54	6.5	5:42	7.9	11:07	11:55
21 Sat.	5:55	6.5	6:35	8.0	—	12:00
22 Sun.	6:45	6.6	7:22	8.1	12:48	12:51
23 Mon.	7:33	6.6	8:05	7.9	1:38	1:42
24 Tue.	8:16	6.6	8:47	7.7	2:24	2:28
25 Wed.	8:59	6.5	9:26	7.4	3:09	3:10
26 Thu.	9:41	6.4	10:03	7.1	3:50	3:54
27 Fri.	10:21	6.3	10:42	6.8	4:32	4:35
28 Sat.	11:04	6.2	11:21	6.5	5:09	5:17
29 Sun.	11:46	6.2	—	—	5:51	6:02
30 Mon.	12:02	6.2	12:33	6.2	6:34	6:52

Moon Phases:

Last Qtr. 1st, New Moon 9th, 1st Qtr. 16th, Full Moon 23rd

JULY, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Tue.	12:47	6.0	1:19	6.3	7:21	7:48
2 Wed.	1:32	5.8	2:10	6.4	8:12	8:44
3 Thu.	2:23	5.7	3:03	6.6	9:03	9:40
4 Fri.	3:20	5.6	3:59	6.8	9:54	10:34
5 Sat.	4:17	5.7	4:54	7.2	10:44	11:26
6 Sun.	5:16	5.9	5:48	7.6	11:34	—
7 Mon.	6:11	6.2	6:37	7.9	12:16	12:24
8 Tue.	6:59	6.5	7:25	8.2	1:07	1:13
9 Wed.	7:48	6.8	8:10	8.3	1:55	2:05
10 Thu.	8:36	7.0	8:58	8.3	2:44	2:56
11 Fri.	9:26	7.2	9:45	8.2	3:30	3:46
12 Sat.	10:19	7.3	10:37	7.9	4:16	4:39
13 Sun.	11:17	7.4	11:30	7.5	5:06	5:33
14 Mon.	—	—	12:15	7.4	5:57	6:31
15 Tue.	12:26	7.1	1:14	7.4	6:52	7:35
16 Wed.	1:24	6.7	2:17	7.3	7:53	8:40
17 Thu.	2:25	6.4	3:22	7.3	8:53	9:43
18 Fri.	3:30	6.2	4:30	7.4	9:53	10:41
19 Sat.	4:38	6.1	5:29	7.6	10:49	11:37
20 Sun.	5:39	6.2	6:22	7.7	11:42	—
21 Mon.	6:30	6.4	7:07	7.7	12:29	12:32
22 Tue.	7:17	6.5	7:49	7.7	1:17	1:22
23 Wed.	7:57	6.6	8:25	7.6	2:02	2:08
24 Thu.	8:34	6.6	8:59	7.4	2:43	2:48
25 Fri.	9:12	6.6	9:31	7.1	3:21	3:28
26 Sat.	9:48	6.6	10:06	6.9	3:59	4:06
27 Sun.	10:24	6.6	10:40	6.6	4:35	4:43
28 Mon.	11:04	6.6	11:17	6.4	5:12	5:24
29 Tue.	11:46	6.6	11:59	6.2	5:49	6:07
30 Wed.	—	—	12:33	6.6	6:33	6:59
31 Thu.	12:45	6.0	1:24	6.6	7:23	7:57

Moon Phases:

Last Qtr. 1st, New Moon 9th, 1st Qtr. 15th, Full Moon 23rd, Last Qtr. 31st

AUGUST, 1975

		High Water			Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Fri.	1:36	5.8	2:18	6.7	8:19	9:00
2 Sat.	2:33	5.8	3:19	6.9	9:15	9:59
3 Sun.	3:37	5.8	4:20	7.3	10:12	10:54
4 Mon.	4:44	6.1	5:19	7.7	11:07	11:47
5 Tue.	5:45	6.5	6:14	8.1	—	12:00
6 Wed.	6:40	7.0	7:05	8.4	12:40	12:54
7 Thu.	7:30	7.5	7:52	8.6	1:31	1:47
8 Fri.	8:20	7.8	8:40	8.6	2:20	2:39
9 Sat.	9:10	8.1	9:29	8.4	3:08	3:31
10 Sun.	10:03	8.1	10:19	8.1	3:55	4:23
11 Mon.	10:58	8.0	11:12	7.6	4:43	5:16
12 Tue.	11:54	7.8	—	—	5:33	6:12
13 Wed.	12:05	7.2	12:55	7.6	6:28	7:14
14 Thu.	1:05	6.7	1:58	7.4	7:27	8:19
15 Fri.	2:05	6.3	3:03	7.3	8:33	9:24
16 Sat.	3:13	6.1	4:10	7.3	9:33	10:22
17 Sun.	4:21	6.1	5:11	7.4	10:33	11:15
18 Mon.	5:23	6.3	6:03	7.5	11:24	—
19 Tue.	6:14	6.6	6:48	7.6	12:06	12:14
20 Wed.	6:56	6.8	7:24	7.6	12:51	1:01
21 Thu.	7:33	7.0	8:00	7.6	1:33	1:43
22 Fri.	8:08	7.1	8:31	7.5	2:13	2:23
23 Sat.	8:42	7.2	9:01	7.3	2:49	3:01
24 Sun.	9:15	7.2	9:31	7.1	3:25	3:36
25 Mon.	9:49	7.1	10:03	6.8	4:00	4:13
26 Tue.	10:26	7.1	10:38	6.6	4:34	4:51
27 Wed.	11:06	7.0	11:20	6.4	5:11	5:30
28 Thu.	11:53	7.0	—	—	5:49	6:18
29 Fri.	12:05	6.2	12:44	7.0	6:39	7:16
30 Sat.	12:54	6.1	1:40	7.0	7:37	8:21
31 Sun.	1:58	6.1	2:44	7.2	8:43	9:27

Moon Phases:

New Moon 7th, 1st Qtr. 14th, Full Moon 21st, Last Qtr. 29th

SEPTEMBER, 1975

	High Water				Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Mon.	3:07	6.2	3:49	7.5	9:45	10:26
2 Tue.	4:17	6.6	4:54	7.9	10:44	11:21
3 Wed.	5:23	7.1	5:52	8.3	11:40	—
4 Thu.	6:20	7.8	6:45	8.7	12:14	12:35
5 Fri.	7:12	8.3	7:33	8.9	1:05	1:29
6 Sat.	8:03	8.7	8:20	8.8	1:54	2:22
7 Sun.	8:52	8.9	9:07	8.6	2:43	3:13
8 Mon.	9:42	8.8	9:58	8.2	3:31	4:04
9 Tue.	10:35	8.6	10:51	7.7	4:20	4:56
10 Wed.	11:32	8.2	11:44	7.2	5:09	5:51
11 Thu.	—	—	12:31	7.8	6:03	6:50
12 Fri.	12:44	6.8	1:35	7.4	7:03	7:54
13 Sat.	1:45	6.4	2:40	7.2	8:08	8:58
14 Sun.	2:53	6.3	3:45	7.1	9:13	9:57
15 Mon.	3:59	6.3	4:49	7.2	10:12	10:50
16 Tue.	4:58	6.5	5:39	7.3	11:03	11:36
17 Wed.	5:50	6.9	6:20	7.5	11:50	—
18 Thu.	6:32	7.2	6:56	7.5	12:20	12:35
19 Fri.	7:07	7.4	7:30	7.6	1:01	1:17
20 Sat.	7:39	7.6	8:01	7.5	1:39	1:55
21 Sun.	8:11	7.7	8:30	7.3	2:16	2:33
22 Mon.	8:43	7.7	8:58	7.2	2:51	3:10
23 Tue.	9:15	7.7	9:30	7.0	3:25	3:46
24 Wed.	9:52	7.6	10:05	6.8	4:00	4:23
25 Thu.	10:32	7.5	10:42	6.6	4:37	5:01
26 Fri.	11:20	7.4	11:33	6.4	5:18	5:47
27 Sat.	—	—	12:13	7.3	6:05	6:43
28 Sun.	12:32	6.3	1:11	7.3	7:05	7:51
29 Mon.	1:35	6.4	2:14	7.4	8:14	8:57
30 Tue.	2:45	6.6	3:22	7.6	9:22	9:59

Moon Phases:
New Moon 5th, 1st Qtr. 12th, Full Moon 20th, Last Qtr. 28th

OCTOBER, 1975

	High Water				Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Wed.	3:56	7.1	4:28	7.9	10:25	10:54
2 Thu.	5:03	7.7	5:27	8.3	11:21	11:47
3 Fri.	6:01	8.4	6:22	8:6	—	12:17
4 Sat.	6:53	8.9	7:12	8.8	12:38	1:12
5 Sun.	7:44	9.3	8:00	8.7	1:30	2:03
6 Mon.	8:32	9.3	8:48	8.5	2:19	2:55
7 Tue.	9:21	9.1	9:37	8.1	3:07	3:46
8 Wed.	10:14	8.8	10:27	7.6	3:56	4:37
9 Thu.	11:09	8.3	11:22	7.1	4:45	5:28
10 Fri.	—	—	12:05	7.8	5:38	6:24
11 Sat.	12:21	6.7	1:06	7.4	6:36	7:24
12 Sun.	1:22	6.4	2:08	7.1	7:40	8:27
13 Mon.	2:24	6.3	3:11	6.9	8:43	9:25
14 Tue.	3:25	6.4	4:09	6.9	9:43	10:16
15 Wed.	4:25	6.7	5:02	7.0	10:34	11:02
16 Thu.	5:15	7.0	5:43	7.1	11:23	11:43
17 Fri.	5:58	7.3	6:22	7.2	—	12:06
18 Sat.	6:35	7.6	6:57	7.3	12:25	12:48
19 Sun.	7:09	7.8	7:29	7.3	1:04	1:28
20 Mon.	7:41	7.9	8:00	7.2	1:41	2:07
21 Tue.	8:14	8.0	8:30	7.0	2:18	2:44
22 Wed.	8:49	8.0	9:03	6.9	2:54	3:21
23 Thu.	9:25	7.9	9:40	6.7	3:31	4:00
24 Fri.	10:07	7.8	10:23	6.6	4:09	4:40
25 Sat.	10:54	7.6	11:14	6.5	4:53	5:27
26 Sun.	11:49	7.5	—	—	5:44	6:21
27 Mon.	12:13	6.5	12:47	7.4	6:44	7:26
28 Tue.	1:19	6.6	1:50	7.4	7:54	8:31
29 Wed.	2:27	6.9	2:55	7.5	9:03	9:32
30 Thu.	3:38	7.4	4:01	7.6	10:04	10:28
31 Fri.	4:44	8.0	5:04	7.9	11:03	11:23

Moon Phases:
New Moon 5th, 1st Qtr. 12th, Full Moon 20th, Last Qtr. 27th.

NOVEMBER, 1975

	High Water				Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Sat.	5:42	8.5	6:00	8.1	—	12:00
2 Sun.	6:37	9.0	6:53	8.2	12:14	12:53
3 Mon.	7:25	9.2	7:41	8.2	1:05	1:45
4 Tue.	8:15	9.2	8:29	8.0	1:56	2:37
5 Wed.	9:03	9.0	9:17	7.7	2:45	3:27
6 Thu.	9:52	8.6	10:06	7.3	3:35	4:16
7 Fri.	10:44	8.0	10:59	6.9	4:24	5:06
8 Sat.	11:36	7.5	11:54	6.6	5:12	5:57
9 Sun.	—	—	12:31	7.1	6:07	6:50
10 Mon.	12:50	6.3	1:27	6.8	7:03	7:46
11 Tue.	1:45	6.3	2:21	6.5	8:04	8:41
12 Wed.	2:44	6.3	3:16	6.4	9:04	9:35
13 Thu.	3:39	6.5	4:09	6.4	9:59	10:21
14 Fri.	4:31	6.8	4:58	6.5	10:46	11:05
15 Sat.	5:18	7.1	5:43	6.6	11:32	11:47
16 Sun.	5:59	7.4	6:22	6.7	—	12:16
17 Mon.	6:37	7.6	6:57	6.8	12:28	12:59
18 Tue.	7:15	7.8	7:33	6.8	1:09	1:41
19 Wed.	7:51	7.9	8:07	6.7	1:49	2:21
20 Thu.	8:28	8.0	8:43	6.7	2:28	3:01
21 Fri.	9:06	7.9	9:23	6.6	3:10	3:42
22 Sat.	9:50	7.8	10:08	6.6	3:52	4:24
23 Sun.	10:37	7.6	11:01	6.5	4:37	5:11
24 Mon.	11:30	7.5	—	—	5:28	6:02
25 Tue.	12:02	6.6	12:29	7.3	6:28	7:01
26 Wed.	1:06	6.7	1:29	7.2	7:33	8:03
27 Thu.	2:11	7.0	2:31	7.1	8:42	9:06
28 Fri.	3:17	7.4	3:36	7:1	9:45	10:04
29 Sat.	4:25	7.8	4:41	7.2	10:46	11:00
30 Sun.	5:26	8.2	5:42	7.3	11:42	11:53

Moon Phases:
New Moon 3rd, 1st Qtr. 10th, Full Moon 18th, Last Qtr. 26th

DECEMBER, 1975

	High Water				Low Water	
Day	A.M.	Ht.	P.M.	Ht.	A.M.	P.M.
1 Mon.	6:21	8.5	6:35	7.4	—	12:37
2 Tue.	7:12	8.7	7:25	7.4	12:45	1:29
3 Wed.	8:00	8.7	8:12	7.3	1:38	2:20
4 Thu.	8:47	8.4	8:59	7.1	2:27	3:09
5 Fri.	9:33	8.1	9:45	6.9	3:15	3:55
6 Sat.	10:19	7.6	10:32	6.6	4:01	4:40
7 Sun.	11:06	7.2	11:21	6.3	4:48	5:25
8 Mon.	11:51	6.7	—	—	5:34	6:13
9 Tue.	12:10	6.2	12:39	6.4	6:25	7:02
10 Wed.	1:00	6.1	1:25	6.1	7:19	7:53
11 Thu.	1:51	6.1	2:16	5.9	8:16	8:46
12 Fri.	2:43	6.2	3:09	5.8	9:14	9:36
13 Sat.	3:38	6.4	4:01	5.8	10:07	10:23
14 Sun.	4:31	6.6	4:54	5.9	10:55	11:09
15 Mon.	5:21	6.9	5:42	6.0	11:42	11:54
16 Tue.	6:08	7.2	6:27	6.2	—	12:28
17 Wed.	6:49	7.5	7:08	6.3	12:37	1:15
18 Thu.	7:29	7.7	7:46	6.5	1:22	1:59
19 Fri.	8:10	7.8	8:27	6.6	2:08	2:41
20 Sat.	8.51	7.8	9:12	6.6	2:51	3:25
21 Sun.	9:35	7.7	9:59	6.7	3:36	4:08
22 Mon.	10:23	7.6	10:51	6.7	4:24	4:54
23 Tue.	11:14	7.3	11:48	6.8	5:16	5:43
24 Wed.	—	—	12:09	7.1	6:13	6:38
25 Thu.	12:50	6.9	1:06	6.8	7:14	7:37
26 Fri.	1:53	7.0	2:08	6.6	8:21	8:40
27 Sat.	2:58	7.1	3:14	6.4	9:27	9:41
28 Sun.	4:07	7.3	4:20	6.4	10:28	10:39
29 Mon.	5:13	7.6	5:25	6.5	11:26	11:36
30 Tue.	6:09	7.8	6:22	6.7	—	12:21
31 Wed.	7:01	8.0	7:12	6.8	12:30	1:13

Moon Phases:
New Moon 3rd, 1st Qtr. 10th, Full Moon 18th, Last Qtr. 25th

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Outdoors In Georgia

July 1973 - December 1974

Compiled by
Brenda A. Lauth

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Opossum: Oct. 12-Feb. 28 (certain north Georgia counties)

Quail: Nov. 20-Feb. 28

Rabbit: Nov. 20-Feb. 28

Raccoon: Oct. 12-Feb. 28 (certain north Georgia counties)

Squirrel: Oct. 19-Feb. 28

Snipe (Wilson's): Dec. 20-Feb. 22

Seasons Closing

Duck: Jan. 20

Coots: Jan. 20

Gallinules: Jan. 20

Mergansers: Jan. 20

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